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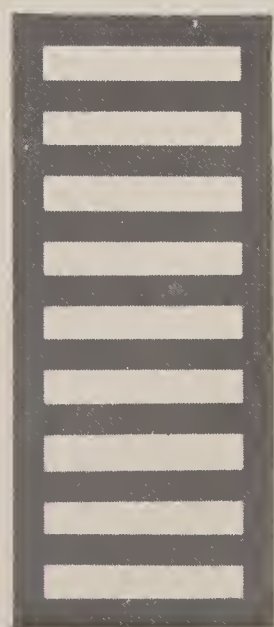
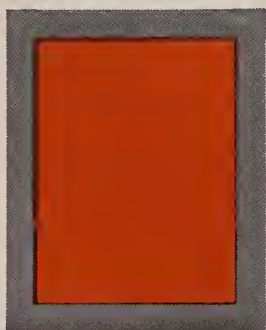
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THE NEW Outlook FOR THE BLIND

January 1970 Volume 64 Number 1

The Rehabilitation Center's Responsibility:
Preparation and Placement
Saul Freedman, Ph.D.

Behavior Modification With the Multi-Handicapped
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The Rehabilitation Center's Responsibility: Preparation and Placement

In attempting to assist every disabled individual to learn to live again as closely as is possible to his or her unique potential, the rehabilitation center must be guided by a philosophy designed to enable all prospective rehabilitants who seek its services to become independent of it as quickly as is feasible. This philosophy must recognize that no one rehabilitation center or agency is capable of offering every service needed by each disabled individual. This philosophy embraces an attitude which does not stress the numbers of clients served but rather lays emphasis upon the quality of the placements secured and cases marked closed. The center's philosophy of rehabilitation is oriented first towards the disabled individual, then the community, and finally the agency itself.

□ Traditionally, we have thought of placement in terms of a vocational or work objective. Since the rehabilitation center has the responsibility of helping to restore the individual to his highest level of independent, productive activity, it must conceive of the word placement in the context of that individual's needs. Placement can mean employment in the work community. It can also mean more effective and independent functioning for the disabled housewife in her home. It can mean more effective and independent functioning for the retired or aged person within his community. It can also mean return to an educational setting as a student. Placement can also mean referral to another agency offering those services not available at the referring agency. In its broadest context, placement can be interpreted as that process which enables the disabled individual to feel confident in stating his choice and in moving towards his greatest potential for more effective functioning.

The rehabilitation center must offer or help obtain every service that individual needs so that he may return as quickly as is feasible to the community from which he came. It is part of the rehabilitation center's responsibility to insure that it does not take over the life functioning and decision-making functions of the disabled individual. When it does, it runs the risk of establishing itself as the new community for that person. We must avoid making that person feel too comfortable in the rehabilitation center. We must instill motivation for leaving the rehabilitation center. We must provide that person with skill and confidence with which to express choice, to function, and to compete.

In fulfilling its responsibility in the preparation of the disabled individual, the rehabilitation center must be flexible in the programs it creates. Its services are to be designed to meet the needs of the individual. Client-

SAUL FREEDMAN, Ph.D.

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Placement Should Be Defined Broadly

Client-oriented services are effective and efficient

oriented services will meet his need most effectively as well as conserve staff time. The rehabilitant will appreciate being recognized for his uniqueness. The rehabilitation center will function most effectively in the preparation of the individual only if it involves him first in a well-articulated diagnostic evaluation. To say that a person has lost vision and therefore requires rehabilitation services does not serve that person's best interests. What his particular blindness means to him is far more vital. What impact has it had upon his total self-image and what losses has he experienced as a result of his disability are questions which must be answered through an evaluatory process in order to insure effective rehabilitation. This unique individual's psycho-social and medical make-up must be understood. Information regarding his present functioning in terms of personal management and communication skills must be obtained. Insights relative to his attitude towards his disability must be gained. The staff team gathered for this diagnostic appraisal must be competent and professionally involved. Their education and in-service training never ceases. The collaborative efforts of the rehabilitation staff team gives meaning to the evaluation effort and provides insight into the next step of the rehabilitation center's responsibility for the disabled individual.

The evaluatory process helps provide the individual and the rehabilitation center with insights concerning the needs of the person. The primary function of the adjustment training which follows enables the individual to learn those techniques which will help him to cope effectively with his losses. He will learn to function in a manner which will assure him that he is complete and effective as a person.

The individual's integrity will be preserved and confidence enhanced if the rehabilitation center develops for him a curriculum which reflects his expressed and demonstrated needs as observed during the evaluatory process. Adjustment training will vary in duration for each individual and will reflect his unique needs by the nature and intensity of the subject matter offered. In assisting the individual to develop a positive self-image and an effective working capacity, therapeutic services should be available and offered if necessary. In summation, the rehabilitation center has the responsibility of bringing the individual to that point of readiness wherein he can profit from the next phase of rehabilitation, educational or vocational training.

□ The rehabilitation process thus far described has emphasized the recognition of the unique needs of the individual and the restorative process used in meeting those needs. This emphasis must continue into the vocational training phase. Educational and vocational training for the individual must reflect the combination of his interests, abilities, and motivation. The rehabilitation center has the responsibility of not narrowing the individual's vocational horizons to what the center itself can offer in the way of training. The rehabilitation center has the responsibility of utilizing both its own and community resources to offer the individual that training which is most appropriate for him.

The rehabilitation center has a vital responsibility in helping to develop

Evaluation and adjustment training

Vocational Training

community educational opportunities for those disabled individuals who should be helped in their preparation to continue their studies for semi-skilled, skilled, and professional occupations.

The rehabilitation center involves more than the placement worker in the fulfillment of its responsibility of placement. Each social service worker referring the individual to another agency for additional services that will help make that person more effective and complete is involved in a placement process. Every children's worker attempting to secure more effective educational services is involved in a placement process. Every rehabilitation teacher working in the field with the aged person helping him function more effectively within his local community is involved in a placement process.

In the rehabilitation center, we tend to think of the placement worker as one who attempts to secure employment for those disabled people who have presented themselves to the center. Of greatest importance is the placement worker's constant involvement as a member of the rehabilitation team staff. He is at least an active observer, if not an active participant, concerned with each individual who has entered into the rehabilitation process. His awareness and involvement with the preceding rehabilitation phases have effectively set him into action looking for job opportunities for the individual even before he has been referred for this service. The placement worker is not concerned with the number of people he will place, but rather with the quality of the placements obtained. Assisting the disabled individual attain job satisfaction through the employment of the individual's interests and skills insures the quality placement for which the rehabilitation center has responsibility. The placement worker is not so much involved in filling job orders presented by prospective employers as he is in recruiting employers and work opportunities for qualified workers. Again, the primary responsibility is to the individual rather than the prospective employer. With this orientation, both will be satisfied.

Part of the rehabilitation center's responsibility in the placement process is to create an attitude of comfort and security for prospective employers who are contemplating the engagement of workers with disabilities. The rehabilitation center's willingness to supervise on-the-job training and to make itself available to meet personnel problems should do much in ameliorating employer fears and help in creating new work opportunities. The rehabilitation center must instill in the rehabilitant the concept that he is always welcome to return should he wish to explore the possibilities for any other services which would increase his competence.

□ Although we in rehabilitation centers have traditionally offered evaluatory, adjustment, and placement services to disabled individuals, we must recognize that each member of the disabled person's immediate family has been affected in some way. If rehabilitation services could involve some of the family members, the total impact of this process might be even more effective. Despite the education, sophistication, and specialization of the professional rehabilitation team staff, the real therapeutic catalyst for each disabled individual is his family. Sometimes, unintentionally, family members

Placement is of concern to entire staff

Placement worker is part of team

Family Involvement Is Important

can foster a negative self-image for the disabled individual. The rehabilitation center should accept the responsibility for attempting to modify the family's negative attitude toward disability. This will soon have direct impact upon the prospective rehabilitant.

We have seen instances of well-intentioned but misguided families who, in their desire to protect the member who has become disabled, have actually prevented that disabled person from seeking rehabilitation services. An unfair and difficult burden fell upon that person in that he not only had to convince himself of his ability to profit from rehabilitation services, but he had to overcome the objections of his family as well. The rehabilitation process would be more effective if the family could be converted into a co-therapist unit assisting their disabled member into and through the various phases of the rehabilitation process. The rehabilitation center has the responsibility for working with the family. They carry with them the prejudices toward disability which existed prior to the loss experienced by one of their members and reflect the prejudices and attitudes of the community at large.

□ The disabled individual and his family do not live in a vacuum. The onset of disability sometimes precipitates partial or complete withdrawal. Since we have spoken of the rehabilitation center's responsibility in returning the individual to his community as quickly as is feasible, it would appear to follow that the center has some responsibility to the community.

Of prime importance is the rehabilitation center's recognition that it has a responsibility in returning to the community one of its citizens. The rehabilitation center has the responsibility of equipping this citizen with every skill that he needs and can utilize so that he will function in a manner which for him is his optimal level. The rehabilitation center will be assisting the community in regaining a productive member with talents to offer.

The rehabilitation center has a vital responsibility to the community in making it conscious of rehabilitation. It must accept responsibility for the public relations efforts which are directed to the community. The rehabilitation center's involvement in public relations might insure the creation of a community climate which would feel comfortable rather than sympathetic with disabled individuals. Ultimately, the profit from this approach would be great. We see then that the rehabilitation center has a responsibility for public education and information. The most effective areas in which to start is within the rehabilitation community itself which includes the center and agency and training institutions for professionals. It should be noted only after the rehabilitation center has modified its own prejudices towards disability can it expect to educate the public at large. The best teaching model will be the successful rehabilitant who has resumed his responsibilities in the community and goes about his daily chores effectively, independently, unnoticed, and without fanfare.

In fulfilling its primary responsibility to the individual, the rehabilitation center must be sufficiently secure with its own methods of operation to enable it to constantly re-examine itself. Rehabilitation reflects the vitality and dynamism of people and their ability to adjust to new life situations.

Responsibility to the Community

Agency self-examination

The rehabilitation center has the responsibility for being able to reflect and effect whatever changes are necessary.

No two rehabilitation centers are alike in the staff, facilities, and resources that they have available. Yet, each has the same responsibility to understand its strengths and limitations so that it might create programs designed to implement the goals and objectives that have previously been established.

□ No one rehabilitation center is capable of offering every service needed by each disabled person. It has the responsibility of helping that person obtain services through other community agencies. The rehabilitation center has the responsibility to work in concert with other community resources and to be ready to provide those ancillary or single services requested of it by others. In seeing itself as a community resource, the rehabilitation center stands ready to offer itself in a manner which states to the rehabilitant that he will be helped as intensively as is possible and as long as is necessary so that he can resume his former role as soon and as effectively as is feasible.

Philosophically, the rehabilitation center has the responsibility of working itself out of a job with each rehabilitant. The primary responsibility of the rehabilitation center is to the disabled individual so that he can be placed in the community of his family, friends, work, and avocational interests. The rehabilitation center has the responsibility for seeing that the overall community benefits through the greater acquisition of skill and of independence of its disabled citizens. The success with which the rehabilitation center meets these responsibilities shall be the criteria for judging the center's effectiveness and existence.

The Agency as a Community Resource

Our office supply of the January 1969 issue of the *New Outlook for the Blind* is almost exhausted. If you no longer need or want your copy of this issue, please return it to us. We will pay you 60c plus postage for each copy.

Behavior Modification With the Multi-Handicapped

The title of this article will no doubt label me as a "behavior modifier." Although I'm not content with the label, feeling as I do that labels are just as detrimental to the professional as they are to children, let me accept it for the moment and behave accordingly.

The first step in behavior modification, and especially in that brand of behavior modification known as programmed instruction, is to specify, in behavioral terms, the educational objectives or terminal goals of the modification procedures. That is, prior to initiating any instructional program, it must be determined what *behaviors* the student will be performing after the instruction that he cannot or does not perform beforehand. As I feel that my primary task in this article is to modify the behavior of the reader, it follows that to be consistent I should specify some educational objectives for this presentation.

□ I will, therefore, summarize some points that I feel are important in behavior modification, a summary organized along the very lines that might be used in such a program. I have divided the content with which I wish to deal into several sub-areas and have prefaced the discussion of each with a statement, related to increasing or decreasing response rates, of the behaviors that I hope to influence—yours. Let me be clear: If you do not do anything different, if your behavior does not change as a function of reading this, then my time and your time has been wasted. The proof of any instructional program is in the pudding: If the program doesn't alter *behavior*, then it is nothing more than a waste of time and energy.

A few more preliminary comments are necessary before beginning. As will become clear, I am speaking mainly to teachers and I am concerned mainly with the behavior of teachers. Any educational situation, whether it is explicitly behavior modification or not, has, as its basic components, the behaviors of a teacher; the behaviors of a student; and some environmental context which can, to a certain extent, be manipulated by the behaviors of the teacher. What is of interest here is the relationship that exists between the behaviors of the teacher and the behaviors of the student. If the teacher's behaviors are "correct," then the behaviors of the student will become progressively better; that is, the student will be learning. At the same time, the "correct" behaviors of the teacher will be reinforced by the progress of the student and, thereby, be maintained. I feel that student progress is indeed the ultimate reinforcer for any teacher. This is the point of this paper and in the next section I will describe some teacher behaviors that I feel will, if engaged in, lead to this ultimate reinforcer.

I should point out that I will make no attempt here at outlining in detail the concepts and methods of behavior modification. Those interested in such

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Summary of Behavior Modification

Preliminary comments

an outline can get this information from a variety of sources, including Reynolds,²¹ Holland and Skinner,¹⁰ and Risley and Baer.²²

The final portion of this paper will deal more specifically with the multiply handicapped, and will suggest some ways in which the techniques of behavior modification may prove useful in the habilitation and education of the multiply handicapped.

With these preliminaries out of the way, what are some of the responses in which the teacher can engage to insure maximum progress in his students and thereby maximize his reinforcers?

☐ *Increased rate of administering positive reinforcers contingent upon appropriate behaviors and behavioral improvements, and a decreased rate of administering positive reinforcers for inappropriate behaviors.*

Teacher Behavior 1

The positive reinforcers available for the teacher who takes the simple, common sense principle of positive reinforcement are already well documented (see references 16, 25, 26, and recent issues of *Behavior Research and Therapy* and the *Journal of Applied Behavior Analysis*). There is not space to discuss in detail the literature demonstrating the functional importance of the contingencies of positive reinforcement. Given the vast amount of attention that has been paid recently to this topic in the literature, I am probably safe in assuming at least a basic knowledge in this area on the part of the professional.

I would like, however, to spend some time discussing a few of the details of reinforcement that seem to me to be especially important. The first point I wish to make is a simple one: In any situation where a teacher is to function as a teacher, a reinforcer must be assured, as must the fact that the reinforcer is indeed being received by the student contingent upon appropriate behavior. We are finding daily that more and more cases of non-learning are, simply enough, reinforcement problems.

For example, a graduate student friend of mine was recently engaged in a project aimed at teaching an emotionally disturbed youngster to discriminate between different colors. Her procedure was very simple: Present two objects of different colors and ask the child to choose one of them. After several sessions of non-learning, as evidenced by near random responding, she began to mull over several hypotheses to account for this situation. She thought, for example, that the child might not "understand" the task, that his receptive vocabulary was so limited that he might not have understood the directions she had given him. More plausibly, she guessed that he might be color blind, and might indeed not be able to tell the colors apart. She finally hypothesized that she might not have a reinforcer operating. This seemed somewhat remote because she had tried a variety of reinforcers, from simple knowledge of being correct, through social reinforcers, to a variety of edibles. Fortunately, for this story, the child contracted a bad head cold and came to school one day with an almost continuous need to blow his nose. In a moment of inspiration she decided to make nose-blowing contingent upon correct color selection and achieved nearly errorless performance in a matter of a few minutes.

Choosing reinforcers, an example

The points I want to make are these: (1) In any instructional setting, the presence of a reinforcer and its administration contingent upon appropriate responding must be assured. I do not know if reinforcement is necessary for learning, but I do know that learning requires, as a prerequisite, *behavior*, and that very little appropriate student behavior is generated in the absence of reinforcement; (2) If an instructional program is failing, the contingencies of reinforcement should be examined first (the mistake that the graduate student of my story almost made was assuming an inherent or internal limitation or deficit on the part of the child); and (3) The trap of assuming reinforcers must also be avoided.

Reinforcement is a highly individual thing and, especially in dealing with the multiply handicapped, wide individual differences with respect to what is, and what is not, reinforcing can be expected. A reinforcer can only be assured if a change in behavior occurs *after* it has been correctly administered for some period of time. If what is assumed to be a reinforcer is applied and behavior does not change, then the assumption is probably incorrect. In the best of situations students will engage in learning behaviors for the self-reinforcing properties of those behaviors. This may, in fact, be the ultimate goal of the instruction, but it may require going to great lengths, in terms of the reinforcers that are used, to get the students to engage initially in these behaviors.

The "teacher behavior" goal for this section states that the teacher should increase his rate of applying positive reinforcers for appropriate behaviors and for *behavioral improvements*. With respect to reinforcing behavioral improvements, let me simply say that this is what the behavior modifier means when he uses the term "shaping." Any instructional program is aimed at progress, and the term "progress" implies continuous behavioral change, however slow and gradual, over time. The notion of shaping is that the same behavior is never reinforced twice. The rule of thumb is to reinforce *improvements* in behavior, to deliver a reinforcer only when the student has made a behavioral improvement relative to the last reinforced response. With shaping still being more of an art than a science,^{3,4} I can only say that the teacher will have to let his students tell him how much of an improvement will be required before a reinforcer is delivered. The student does this very well, if the teacher is able to pick up the signals.

The "teacher goal" of this section also specified a decreased rate of reinforcing inappropriate behavior. I'd like to make several points with regard to this.

First, when a person oriented to operant conditioning observes the usual classroom or home, he is usually impressed, except in rare cases,⁶ with the paucity of positive reinforcement for appropriate behavior and with the richness of assumed negative reinforcers delivered for inappropriate behavior. I am well aware of this from my experience as a parent and with a large group of severely retarded children. In both cases I know how difficult it is to focus on the positive behaviors of a child who quietly engages in good behavior, constructively plays by himself, and bothers no one. I

Individuals require individual reinforcers

Negative reinforcers may outweigh positive reinforcers

also know how difficult it is to ignore the disruptive or aggressive child and to resist the temptation to scold or punish bad behavior. The reinforcers that are administered in the home or classroom are, generally speaking, of the negative type that are administered only when behavior is inappropriate or disruptive. Yet I also know that the switch must be made; that we, as parents and teachers, must devote our reinforcing energies to increasing positive, appropriate behaviors, instead of concentrating, as is so easy to do, on inappropriate, disruptive behaviors. This switch, if it can be made, can in itself go a long way toward obtaining that ultimate reinforcer, student progress.

The second point I want to make concerns the sometimes detrimental effects of well-intentioned, but ill-directed, positive reinforcement. The tendency to reinforce problem behavior is strong, especially when we are dealing with retarded or multiply handicapped children. Let me cite an example of this, one which I call "killing a child with kindness."

Charles is a severely retarded boy of about 10 years old. He is one of those unfortunate children who has apparently taken it upon himself to beat his face to pudding in the shortest possible time—a "headbanger." Observing his behavior suggested to us that the social reinforcers he received, contingent upon hitting his face with his hand, may have been playing at least a small role in maintaining his self-destructive behaviors. We instituted a program, therefore, of ignoring him completely while he was hitting and of delivering maximum social attention whenever he was seen *not* hitting. The program probably would have worked. However, his hitting kept getting worse and we continued to get reports from the ward aides that he didn't hit himself at all as long as they held him on their laps and spoke to him gently. I have a feeling that they were killing him with their well-intentioned kindness.

In sum, then, for a teacher to maximize student progress and thereby his own reinforcers: (1) In all instructional situations insure that a reinforcer that can be administered contingent upon appropriate behavior and behavioral improvements is available; (2) If a program is not leading to student progress, the contingencies of reinforcement should be examined first; (3) Reinforcers for students should not be assumed, but rather their behavior should be allowed to indicate when reinforcers are operating and when they are not; (4) Reinforcers should be administered only when behavioral improvements are obtained; and (5) It must be insured that no positive reinforcers are administered contingent upon inappropriate behavior.

☐ *Increased rate of measuring behavior before, during, and after an instructional program.*

There is an incongruity in our society in the things that we do and do not accurately measure. It is indeed strange that the average teacher probably knows the miles-per-gallon behavior of his car more precisely than he does the arithmetic behavior of his students and that the clinician probably measures his golf score more accurately than he does the actual behavior of his clients. I am inclined to think that this lack of measuring behavior on the part of the teacher or clinician is often a defensive measure—

"Killing a child with kindness"

Maximizing student progress

Teacher Behavior 2

to not assess behavior is to insure that one will never be shown to be ineffective or a failure.

I am certain, on the other hand, that teachers are interested in demonstrating efficiency in teaching. It seems to me that the only way that this can be accomplished is to assess accurately the amount of behavior change in students and to relate this to the amount of time that was required to produce this change. This requires, it follows, that the behavior of the student prior to his beginning the instructional program be precisely known, and, equally precisely, his behavior when he completes the program.

Equally important here is the fact that direct assessment of entering behavior can increase instructional efficiency by indicating, in direct fashion, the content of the program required for each student.^{8,9} The Illinois Test of Psycholinguistic Abilities (ITPA)¹⁵ is a good example of this technique, because the goal of assessment of the ITPA is to delineate the areas of language on which work is needed. At a simple level, it would be instructional suicide to concentrate on receptive vocabulary (auditory decoding) in a non-verbal child, if an adequate pre-program assessment would have shown that that the child's decoding system was intact and functioning, but that his expressive or vocal encoding system was out of order. Maximize reinforcers! Increase the rate of assessing the entering behavior of students relative to the goals of instruction.

☐ *Increased rate of altering the instructional program of each child on the basis of the behavior that each child emits in the context of his program.*

From the preceding it follows that the best instructional program is one that is flexible, changing on the basis of the behavior of the child in the context of the program. I prefer the term "dynamic programing" to describe this situation, although others have used the terms "branching program" and "responsive environment."¹⁹ Regardless of terminology, the basic procedure is the same: The stimulus input to any student at any point in time should, for maximum instructional effectiveness, be maximally appropriate, given his past performance in that specific instructional program. This requires, indeed, that the program be continually altered on the basis of the student's behavior. This seems especially important for the multiply handicapped child for whom there are far fewer "universal" teaching programs available and with whom individual differences seem more pronounced. The rule of thumb, to maximize reinforcers, is to segment the teaching program into just manageable steps that require as much behavior change at any given time as the student is capable of producing and that reduce immediately the behavior competence-program demand discrepancy whenever the student "hangs up." Some day, I think, these procedures will be based on data—at present, they appear to require the sensitive touch of an artist.

☐ *Increased rate of ordering complex behaviors in hierarchical fashion, and a concomittant increased rate of teaching prerequisite, prior to teaching subsequent complex behaviors.*

I hope in this section to demonstrate the necessity for ordering complex behaviors in a hierarchy and to focus, following this, on teaching the lower-

Assessing entering behavior

Teacher Behavior 3

Teacher Behavior 4

order complex behaviors before teaching higher-order complex behaviors. The rationale for a hierarchy of complex behaviors comes from a variety of sources, including Piaget's stages of development (nicely summarized by Flavell⁷), Staat's notion of basic behavioral repertoires,²⁴ Jensen's theory of levels of learning ability,^{13,14} and Gagné's six types of learning.^{8,9} What is required, I think, and this is especially true for the low-functioning and multiply handicapped child, is an ordering of the complex behaviors through which each child should go and a teaching program aimed at developing each of these in turn.

Let me cite an example to make the point clearer. We may, for instance, be interested in teaching language to a non-verbal child. We have, as our terminal behavior, the imitative production of simple sentences. We might begin, following the notion of hierarchical ordering, by teaching the child simple to imitate our gross motor movements. This is based on the notion that the basic behavioral repertoire of imitation may be a prerequisite for speech production. We could then progress to the repertoire of imitating fine motor movements, to the repertoire of imitating mouth movements, to the repertoire of imitating sounds, to the repertoire of imitating words, and finally, to the repertoire of imitating simple sentences. Each of these repertoires can be seen as a complex behavioral capability, and, taken together, they form a hierarchically-ordered sequence of complex behaviors. I have no data to indicate that this particular sequence is either correct or necessary—I am only suggesting that this type of approach may prove to be more efficient than our present practices, especially in the area of the multiply handicapped. The work of Piaget, Jensen, Staats, and Gagné can go a long way towards suggesting the types of behavioral repertoires that are prerequisite for later, higher-order repertoires.

□ *Increased rate of analyzing complex behaviors into component parts, and teaching the components individually, in just manageable segments.*

Just as complex behaviors can be ordered in a hierarchy, so each complex behavior itself can be seen as being composed of its individual behavioral components. In the preceding section we were concerned with inter-behavior components; here we are concerned with intra-behavior components.

I think the best way to explain this is to cite an example, teaching a child to button buttons, from a manual for parents and teachers of retarded children.¹⁷ Looking carefully at button-buttoning behavior, it can be seen that there are about four or five specific behaviors that go into the final act. First, the child must grasp the edge of the button with one hand and the buttonhole with the other, spreading the buttonhole slightly with his thumb as he does so. He must then press the edge of the button against his thumb, after which—and this is the tricky part—he must make a quick maneuver with his buttonhole hand, grasping the edge of the button and pulling and pushing it through. Meanwhile, the hand originally holding the button must drop it and grasp the edge of the material alongside the buttonhole, stabilizing it as the button is pulled through. The point is that complex behaviors can be broken down into their component parts and each of these components can,

Utilizing hierarchial ordering in complex behaviors

Teacher Behavior 5

Utilizing hierarchial ordering in a complex behavior

as the child requires, be taught as a separate unit. The components can then be put together and the final, fluid, terminal behavior obtained.

The same kind of analysis can be used in teaching the child new words (see, e.g., Risley et al.²³). Basically, in this instance, we assess the entering behavior by asking the student to say the whole word. If he can master it as a unit, fine. If he cannot, we break the word down into its component sounds and teach them in as many units as required. The word "me," for example, can be taught as an "mmm" and an "eee" sound, and then put together as "mmm-eee," and, finally, as "me."

To maximize reinforcers, then, the terminal, complex behavior must be broken down into its component parts and taught individually. Then, with the parts put together, the terminal response is obtained. Let me point out, however, that the child must determine how much any behavior is segmented; again, the teacher should always deal with just manageable segments in order to obtain maximum efficiency and effectiveness.

□ *Increased rate of engaging in behaviors that match the environment to the child, in the initial stages of instruction, and the child to the environment, in the latter stages of instruction.*

When dealing with multiply handicapped, or blind, or retarded children, I feel that there is a tendency to match the environment to the child and to take too few steps to insure that the child will eventually be able to adapt to the world as it is. This statement is also true of many behavior modification studies. The simple application of an edible for the emission of a verbal response in a nonverbal child, for example, is an example of creating an artificial environment for a handicapped child.

I feel that this environment-to-child matching is, in the initial stages of instruction, of primary importance. It is often the only way that behavior can be started, the only way the child can be started on the road to adaptive, normal behavior. We must, when dealing with the retarded or handicapped child, create highly artificial environments because we know that they cannot live and learn in normal ones. Yet the initial, artificial environment should never be considered to be anything more than a means to an end. Obviously, any behavior that has been built with edibles, and which requires continued edibles for its maintenance, is a behavior that is totally irrelevant to life. The goal must always be behaviors that are spontaneously generated in the natural environment; it is never enough to concentrate on behaviors built and supported in artificial surroundings and which require artificial (also called extrinsic) reinforcers.

How can this transition from the artificial to the normal be made? We can begin by defining the specific behaviors that will be required of the child if he is to function in a normal environment. In the Mimosa demonstration project in Parsons, Kansas, for example, extensive observations of the natural environment were made prior to the initiation of a program designed to place trainable, mentally retarded girls from an institution back into the community. These observations were used to define the behaviors that would be required for successful adaptation to the community and these behaviors formed the educational objectives of the project.

Teaching words through hierarchical ordering

Teacher Behavior 6

Matching environment to child

Matching child to environment

Secondly, we can work towards the development of what could be termed "natural reinforcement hierarchies" in students. This means simply that efforts are taken to terminate, as rapidly as possible, the contrived or extrinsic reinforcers that are used to get behavior started. Two ways in which this can be accomplished are to reduce the frequency and amount of such reinforcers and to concentrate on letting the child reinforce himself by making a high-probability behavior contingent upon a lower-probability behavior.^{11,12,20}

□ *Increased rate of measuring, changing something, and then trying again.*

The behavior modification system has been succinctly described by Lindsay as the "measure, change something, and try, try again" approach to education. When all the frills are ignored, behavior modification really is not much more than this.

To become a "behavior modifier" really isn't hard at all, from this point of view. Any teacher could become one today by simply beginning to record with precision, some behavior the rate of which is to be either increased or decreased. After the measurement, or baseline, is completed, something is simply changed—it really doesn't matter what—and the effects of this change are assessed against the baseline data. If the desired changes do not result, and they probably won't on the first attempts, then try, try again. Continued measuring and changing will guarantee eventual success. The differences between behavior modification and traditional educational processes now become apparent. They are, mainly, differences only in the precision of measurement and in the flexibility of the instituted programs.

I would like to close with a few suggestions that are aimed specifically at increasing our educational efficiency with the multiply handicapped. Following Bateman's conception of the human data processing model, the multiply handicapped child can be conceptualized as being deficient in various combinations of receptive and/or expressive capabilities. The expressive capabilities, at the same time, are dependent upon intact receptive abilities, so a deficit in the latter will result in a deficit in the former. The remainder of this paper suggests some of the ways in which behavior modification may prove useful, first, in assessing the receptive and expressive deficits of the child and, second, in remediating these deficits.

□ The use of operant techniques in sensory assessment was probably first suggested by Watson:²⁷ Watson's proposal was, simply, to train the subject to emit a simple conditioned response in the presence of a light of intermediate wave length, and then to alter the wave length, up and down, to determine the points at which the conditioned response no longer occurred. The absence of the reflex, naturally enough, is a precise indicator that the subject is not receiving the stimulus. The same general technique has recently been used in the assessment of the auditory capabilities of difficult-to-test retarded children.^{4,18} To assess visual or auditory capabilities in those children who cannot give a confirming response to assessment stimuli, building a simple operant response in the presence of high intensity stimuli and the gradual reduction of stimulus intensity to the point of response stoppage, gives accurate assessment of receptive processes.

Teacher Behavior 7

Applications with the multiply handicapped

Assessment of Receptive Deficits

□ Little work, other than that of the psychometric tradition, has been devoted to the assessment of the behavioral capabilities of multiply handicapped children. One promising approach is that of the learning potential group,⁵ which is developing tests designed to measure the ability of children to alter their behavioral outputs in simple learning situations. From a behavior modification point of view, I would like to suggest that expressive—and here I am speaking mainly of motor—responses could be assessed by a technique analogous to that used in the assessment of receptive capabilities. That is, a simple, easily acquired response could be developed and then shaping techniques could be used to alter gradually the topography of that response until it reaches its asymptote. In this way it should be possible to determine the response capabilities of the most handicapped children.

□ Initial work by Barraga¹ has suggested the possibility of altering the receptive capabilities of sensorily handicapped children. I would like to suggest a technique here that is analogous to the operant assessment procedure. A response could be developed in the presence of a high intensity stimulus and the stimulus could be varied systematically in intensity. With practice and patience, it may be that the handicapped child can actually *learn* to attend to environmental events previously below his sensory threshold.

□ If we can be assured, in any specific case, that the child is receiving the stimulus input that is to be learned (receptive processes functioning), then the techniques of behavior modification can be used to alter the expressive responses that are made to those input events. This is, of course, what behavior modification is all about. The techniques of reinforcement, shaping, and so forth are all designed to alter the expressive behavior of the student. Let me repeat, however, the important fact that the student cannot make differential responses to differential stimulus inputs if those inputs are not received. The need for accurate assessment, therefore, is clear.

Assessment of Expressive Deficits

Remediating Receptive Deficits

Remediating Expressive Deficits

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On The Realization of Blindness

Continuing interest in the theoretical work of George Herbert Mead is manifested in a recent flurry of sociological articles concerning the man and his ideas.¹ Mead (1863-1931) was basically a philosopher. He spent most of his career as a faculty member in the Philosophy Department at the University of Chicago. The thoughts of Mead come to us second-hand. He never presented his ideas in book form and wrote only a few journal articles. His ideas come to us through edited lecture notes compiled by students in his 1927 and 1930 social psychology courses.

□ Mead's social psychology focused on man's interaction with his socio-cultural environment. Man is affected by his environment in that he internalizes definitions and interpretations of himself and other objects and events from significant others in his environment. Yet Mead was not a social determinist. Because of the existence of alternative interpretations of objects and events which are held by diverse groups in the social structure, man is exposed to cognitive alternatives. The way man perceives these alternative interpretations and courses of action will affect the behavior man exhibits at any given time and place. Mead thus views man as being capable of rational manipulation of his environment.

Past criticism of Mead's work has been that it fails to provide a very fruitful framework or guide for empirical research. This criticism is usually bolstered by the assertion that only a few empirical studies use the symbolic interaction approach as a theoretical base.² But the paucity of such studies is no reason for discarding the whole line of thought as worthless. This is indeed throwing the baby out with the bath water.

In my recent research into the world view of young, legally blind persons, symbolic interaction theory led me to an empirical finding which might well have been buried had I no familiarity with Meadian thought. In this paper, I will show how Mead's conception of the "self" illuminates a vital process which must take place if a blind person is to adequately cope with his blindness. By limiting myself to a discussion of the "self," I am dissecting out a small segment of Mead's total theory. I do this to save space and expect that it will not detract from my application of Mead's approach. Mead holds that knowledge about the objective reality in which man acts is much less important in understanding why he acts the way he does than is knowledge about man's perception of that reality. Reality exists in men's minds. Man's environment does not have a priori existence which impinges on the individual. Rather, environment can be regulated, manipulated, and changed. Man's environment is composed of objects and events. Both can be the ob-

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Mead's Social Psychology

Mead's conception of the self

jects of empirical inquiry. As objects, we are conscious of them, we can point them out, we can make designations about them. The meaning of objects and events is constructed of regularly patterned actions which groups or individuals take toward that object or action. A chair, for instance, has no intrinsic quality which determines our using it as a seat. We could just as easily use a chair as a weapon to throw or as firewood to burn. But normally, we coordinate our action toward chairs with the actions of others, and when they sit in a chair, we do likewise rather than throwing ours through a window. This coordination of action is the essential characteristic of group life, according to Mead.

Man is unique in his capacity to make an object of himself. He can make an object of himself in thought and in action. The individual can act toward himself as he would act toward other people or other objects. Thus the self can become an object of its own activity or action. You get mad at yourself; you praise yourself; you have to prod or push yourself; you even dress yourself.

Man is self-reflective

In thought, man has the capacity to step outside himself and analyze himself. He can become the object of his own scrutiny. Indeed, the self is open to empirical inquiry. This self-reflective capacity is not innate in man but must be developed.

Mead characterizes the self-reflective process by dividing the self into two categories, the "I" and the "Me." The Me is that part of the self which experiences and reflects upon the actions of the I.

The "I" and the "Me"

. . . the stuff that goes to make up the "me" whom the "I" addresses and whom he observes, is the experience which is induced by this action of the "I." If the "I" speaks, the "me" hears. If the "I" strikes, the "me" feels the blow. Here again the "me" consciousness is of the same character as that which arises from the action of the other upon him. That is, it is only as the individual finds himself acting with reference to himself rather than an object, and only as he is affected by his own social conduct in the manner in which he is affected by that of others, that he becomes an object to his own social conduct.³

To reflect upon yourself, you have to go outside yourself. This is done by putting the "me," the reflective self, into the role of others. You therefore see yourself as others see you. You can imaginatively take the role of one person or a whole group of persons toward yourself. The former process Mead calls taking the role of the "significant other" and the latter taking the role of the "generalized other." Thus a blind person can try to assume the role of his sighted roommate toward himself, or he may try to assume the role of all sighted persons toward him.

□ As an object of his own activity, he can not only perceive himself, have an image of himself, and act toward himself, but he can also communicate with himself. Herbert Blumer summarizes this communication process as follows:

Man Is Self-Communicating

. . . the human being may become the object of his own action. This gives him the means of interacting with himself—addressing himself, responding to the address,

and addressing himself anew. Such self-interaction takes the form of making indications to himself and meeting these indications by making further indications. The human being can designate things to himself—his wants, his pains, his goals, objects around him, the presence of others, their actions, their expected actions, or whatnot. Through further interaction with himself, he may judge, analyze, and evaluate the things he has designated to himself. And by continuing to interact with himself he may plan and organize his action with regard to what he has designated and evaluated. In short, the possession of a self provides the human being with a mechanism that is used in forming and guiding his conduct.⁴

According to Mead, man not only can make indications to himself, but he *must* make these indications if he is to act. Making indications to oneself is a necessary prerequisite to action. Such indications involve defining or interpreting the object or event to which we are reacting. (In a sense, every action is really a reaction, both to our sensory impression of an object or event and to the indications or interpretations we make about it.) The indications also involve assessing alternative courses of action we can take toward the object and anticipating possible consequences of these alternatives. Assessing consequences of action involves evaluating the expectations and reactions of the people around us. Some examples are in order to demonstrate how making indications to oneself is a prerequisite of any social action.

Biologically, we might be very hungry, that is, our stomach might be empty and we might need nutrition, but this biological fact, in and of itself, is not sufficient to cause us to look for food and eat. Before we engage in any act to acquire food, we must first make an indication to ourselves that we can alleviate this feeling of hunger by eating food. We then assess the possible alternatives of what there is to eat or situational contingencies such as its being close to dinner time but not quite dinner time. In this case, we assess whether or not we should alleviate our hunger immediately. All these indications must be made before we can mobilize our energy in quest of food.

Another gastronomic example of how we make indications to ourselves about hunger regards the man, who, after reluctantly accepting a plate of food, completely devours it. At finishing he exclaims, "Well, I guess I was hungrier than I thought!" This commonly heard expression means, "I guess I was really hungrier than I indicated to myself."

□ According to Mead, man is not an impulsive, conditioned being but is rational and reflective. It is only by making indications to ourselves that our behavior becomes orderly, goal-directed, and explainable. The following example will illustrate how we make indications to ourselves to give objects and events meaning.

Let us say that Subject A knocks on a door. Subject B responds to that knock by saying "Come in!" How can we possibly know why Subject B reacted to that knock the way he did unless we know what indications he made to himself regarding the knock? We have to know what the knock "meant" to Subject B if we are to comprehend his response. It is only when we know the subjective meaning attached to a given act or object that we can

Indications are necessary

Examples of indications

Indications Make Behavior Orderly

understand why a person reacts toward the act or object in a particular way. Subject B's response only becomes understandable to us when we become aware of his "interpretative understanding" of the knock.⁵

We can only discover what indications a person makes to himself by asking him. Man's language enables him to transcend his "here and now" and to know of events in different times and places and in other persons' minds. Of course, our ability to transcend our own mind is very dependent upon the richness of the symbolic code we use. Though English has much broader descriptive capacities than most languages, it still gives us rather poor symbolic tools for relating our perceptual and cognitive experience.

Subject B can tell us that he said "Come in" because (1) he indicated to himself that someone was on the other side of the door, (2) that the knocking agent was a human being, (3) who wanted to come inside the room (intent), (4) that he was letting this desire be known by knocking (a culturally prescribed symbol), and (5) that the person who knocked was awaiting a response which would give him permission to enter. Subject B had the alternatives of not saying anything or of saying any number of words or utterances. He indicated to himself that he would grant admittance to the knocker and that this could be accomplished by saying the words "Come in." Only by making the indications that he made about the knock would he have responded in the particular way he did.

□ How does this relate to legally blind persons? First one should realize that legal blindness does not necessarily involve total blindness. A person can have 20/200 vision in the better eye with correction, be able to travel without the aid of a cane or dog, or have tunnel vision (a restricted field of peripheral vision) and still be legally blind.⁶ Eric Josephson reports that in fact few legally blind persons are totally blind.⁷ A somewhat liberal legal definition which includes partially sighted persons who can travel without mobility aids or who can read newspapers, can make the realization of blindness more difficult. One of my respondents, for instance, reports, "They wouldn't let you take industrial sewing unless you could pass the eye test, so when I didn't pass the eye test, they sent me to an eye specialist. He said that I wouldn't be able to do that kind of work because my vision was too bad. I was blind. I always thought that blind people had to be totally blind and not just partially blind."

Common to all legally blind persons is the fact that they cannot do all things in the same way as can persons with unimpaired sight. Perhaps they cannot read a newspaper or a book from end to end at one sitting, or maybe they cannot travel well at night. In order to cope with the problems that their impaired vision poses for them, the blind person must make certain indications to himself. He must realize that he differs from others in his environment in that he cannot see as well as others can. The more vision the legally blind person has, the more difficult it is for him to make this realization. He must indicate to himself alternative ways of doing things so that he can do them by himself, e.g., learning braille so he can read or learning cane travel so he can go out at night.

The use of language

Applications for Blind Persons

□ Making the indication that one is legally blind or has visual impairment sounds very easy, but, in fact, it is not. It is a very foreign concept to a sighted person that one can be blind and not know it. Yet my research indicates that legally blind persons do not become aware of their blindness until rather late in their lives.

The following interview transcriptions relate the experiences of three respondents who had severe visual impairments which they had not indicated to themselves. Note the late age at which they finally made these indications.

. . . When I first went to high school, I had come from the blind school where they tend to segregate you. I guess that it was partially my blindness, but I think that it was then I came to the realization that I was different. When you get into high school, you realize that there are people out there who can see. . . . I finally began to realize that I was extremely different, because I wasn't treated differently at home.

. . . My parents did not tell me I was getting any worse so I did not know that I had reached a lower stage until I was 14. And I just went along thinking it was the same as always. And one day I discovered I was deteriorating . . . when I was 14 I discovered I had deteriorated from 6 to 12.

. . . it goes back as far as I can remember. I wasn't as good as the other guy. Way back when I started school, maybe six or seven. When I started going out and sticking my neck out with the other kids. I found out that I couldn't do the things that the other people were doing. I started wondering why I couldn't do them. I couldn't play ball. When I was working as a kid, I did work on the farm and I couldn't do work as fast and as good as the other kids. I thought, "I'm healthy and feel good, but why can't I do that?" Then later on I started finding out that I couldn't see.

□ But just as this last respondent made no indication to himself that his inabilities were caused by his visual impairment, so others in his environment failed to make this indication. Unless we are given special clues or reason for doubt, we take for granted the biological requisites of social action. For a person to act according to expectations, he must be physically capable of such action. If he is not capable and people around him take for granted that he is, the following type of consequence arises:

I tried to figure out what was in their minds. They were probably thinking that I was goofy or nuts. I was mean, you know? For instance, if I was playing around in the house and would bump a chair and knock it down, which I wouldn't do on purpose, I was blamed for being rough, and really, I didn't mean to do that. I started thinking after a while that people must think I am crazy. He has no sense, he's mean, he's no good.

His parents, who beat him rather frequently for such accidents, never considered the alternative indication that their child could not see the chair he knocked over. If they had considered this alternative, the act would have assumed a different meaning.

How did this respondent eventually come to make the indication to himself that he was blind? He recounts his experience as follows:

Applications for Visually Handicapped Persons

Examples of lack of indication

Indication and Social Action

Example of delayed indication

. . . most of the kids like I was didn't know how to speak English. We came from poor families and people who were not schooled. In those days we had primers, and the teacher would put large poster pictures on the board quite a ways from where I was sitting, and she would point to them with a long cane. And at that time I could not even see the cane. I could see her, I could tell that it was a lady, but I couldn't see the cane. And I could see that she was pointing to something, I could see that, and everytime she would say that this is a dog, this is a cow, or this is a tree. And she would do that a few times. Then, she would call on somebody and she would say, "Well, that is a tree." But not me. I would sit there and wonder how in the world, how could they remember, and when she would call on me, she would say, "Well, what is this?" I would look and would wonder, "I don't know, I don't know!", you see, because I couldn't see. So later on we could sit close enough and I could remember that this was a dog and the picture of a dog didn't look like the picture of the house and I could identify. But even in school, my teachers did not take any patience or any trouble to try and place me in front where I could see, because I was very near sighted. Like the blackboard, if I sat real close I could see about six feet away.

☐ It is important to make the child with a visual impairment aware of this impairment at the earliest possible age. The child can thus adjust to his difficulties by making appropriate indications to himself. He can answer his question about why he cannot do all the things that other children can do. It is further important for the person who is gradually losing his sight to indicate this fact to himself. This will enable him to make any difficulties of his current situation more comprehensible. It will apprise him of alternatives which he might choose to save his sight.

But a tremendous problem lies in the fact that the partially sighted child usually is not aware of any visual impairment until he is already in school and is at least 5-8 years old. Frequently visual impairment is not detected until the child is already in the third grade. At this point, the child exhibits a marked reading deficiency despite the fact that he read well in the first and second grades. It is discovered that the large print of his first and second grade primer was large enough for him but in the third grade, the print in books became too small.

☐ Through the observations of teachers and the administration of eye examinations, it is the schools which often function to bring about the initial awareness of blindness for the child and his parents. This came out in interview after interview with alarming regularity. The father of one respondent claimed:

We didn't even know there was anything wrong with his eyes until we sent him to school in Pittsburgh. Then we found out that he couldn't see the board, he couldn't do anything.

It is the schools which serve to bring about a definition of the child's situation and to make the child's former limitations comprehensible. But this realization has already come rather late.

As reflected in the appraisals of my respondents, by the time the partially sighted child enters school, he is already full of anxiety and self-doubt.

Indication and Adjustment to Blindness

Importance of early indication

The School's Responsibility for Early Realization of Limitation

He wonders why he cannot catch a ball, why he bumps into things or knocks them over, why he isn't popular among his peers. Three or more years of this can have significant adverse effects upon his personality development.

The problem of realizing visual impairment early is indeed difficult. Parents are ego-involved and are often hesitant to admit visual problems in their children. And it is not until the child enters school that he first experiences public, institutionalized care. Continued efforts must be made to educate parents to the importance of admitting or realizing visual impairment and giving the child this awareness as early as possible.

How can this be done? As public elementary schools exist to serve parents and children of the community, and as school nurses are specially trained in the administration of rather simple eye tests and already function to detect some visual problems among school children, it seems that the services of elementary school nurses could easily be extended to *preschool* children for the administration of rudimentary eye tests.

This would have several advantages. An initial indication of a child's visual acuity could be made without charge. Being a free service to the community, economically disadvantaged families could afford to take advantage of this service which would allow much wider coverage to *all* children of the society. The expense to the school district for this service would be minimal as school nurses must be hired anyway and this would maximize their usefulness to the community without, I believe, substantially increasing the length of their workday.

Secondly, if the public schools administer this program, there is a rather effective instrument for disseminating information about the program throughout the community. Older brothers and sisters, already attending the school, could be given written notices of the program to take home; word of the program could be disseminated to parents at the school's annual open house; and posters could be made and distributed throughout the community advertising the free service.

A variation of this proposal, which is already in some communities, is for the school nurse to train a corps of parent volunteers in administering simple eye examinations. This program could be sponsored by the PTA. The volunteers would then hold well-publicized clinics, three or four times a year for the testing of preschool children's eyes.

The advantage of this variation is that once the school nurse trained her volunteers, she could continue her normal schedule. The training could be accomplished in a matter of hours as the administration of simple eye tests is not a very complex matter.

With the cost of detecting severe visual impairment being so low, with the instruments of detection being so available and easy to use, with the severe psychological implications of failing to detect visual problems, it would seem that a mass public program for testing visual acuity, particularly among small children, is long overdue.

☐ To be capable of coping with blindness, it is not sufficient to simply know that you are blind. An indication must further be made as to what

Education of parents essential

Examination of pre-school children

Use of parent volunteers

Meaning of Blindness Is Important

blindness *means*. This is particularly difficult for the congenitally blind. I encountered one congenitally, totally blind respondent who for 17 years was labeled as blind. He could tell anyone who asked him that he was blind, yet it was not until he was 17 that he came to realize what blindness was.

Q. Did you have any problem realizing your blindness?

A. Somewhat. The realization of the extent of the difference between me and the next guy that was sighted came to me rather late. It came to me at the age of 17. It had somewhat of a depressing effect, however, I feel that it didn't last very long or wasn't very deep.

Q. Why did this conception of blindness come about so late?

A. I think . . . because among my own, in my own neighborhood, in my own circle, I never had a feeling of being an underdog.

Q. Were you labeled as blind?

A. I was throughout my childhood. The funny thing was I was labeled as blind.

Q. But you didn't know what this meant?

A. No. I knew what it meant, but it never struck me as such . . . it fooled me in other words. When I was labeled as blind, it stuck out that I was no different.

To indicate what blindness means involves some notion of how the blind person differs from the sighted person, in other words, the totally blind person has to have some conception of what it is to see. This is extremely difficult for a congenitally blind person to conceptualize. And it is extremely difficult for sighted persons to tell a blind person what it means to see. In his fascinating book, *Sight and Space*, von Senden records an account of how a blind 12-year-old girl comes to realize what sight involves.

Conceptualization of sight difficult for blind persons

I posed myself a host of questions about this new and unknown state which had been described to me, and did my best to come to terms with them. In order to satisfy my doubt, I had the idea of trying a strange experiment. One morning I again put on a dress which I had not worn for some time, because I had been growing so rapidly then from month to month, and thus attired I suddenly showed myself at the door of the anteroom in which my governess was already working at the window. I stood listening. "Good Heavens, Lucy!" she said, "Why have you put on that old dress, that only reaches to your knees?" I merely uttered a few idle words and withdrew. This was enough to convince me that, without laying a hand upon me, Martha had immediately been able to recognize that I had again put on the dress that was too short. So this was seeing. I gradually recounted in my memory a multitude of things which must have been daily seen in the same fashion by the people about me and which could not have been known to them in any other way. I did not in the least understand how this happened, but I was at last persuaded.⁶

Though a person may be hungry (has an empty stomach), unless he makes an indication to himself that he is hungry, he will not eat. Though a person hears a knock on the door, unless he makes an indication to himself about what that knock means, he cannot react appropriately to it. Though a person is totally blind or has some severe visual impairment, unless he makes an indication to himself that he is blind *and* unless he indicates to himself what that blindness means, he cannot readily accept adaptive techniques

which might help him cope with special problems which his blindness creates. The fact of blindness is more difficult for a partially sighted person to indicate to himself; comprehending the meaning of blindness poses greater problems for the congenitally and totally blind person.

□ Mead's system of thought is extremely valuable in comprehending some cognitive problems which visually impaired persons experience. In his conception of the self as a process, Mead indicates that for people to act, they must make certain indications to themselves about the object of action and alternative ways of acting. We must help ease the task of realizing the existence and scope and meaning of visual impairments if we are to hope for early and more complete adaptations to these impairments. We must help ease the task of realizing the existence, scope, and meaning of visual impairments if we are interested in reducing the adverse psychological consequences of these impairments. Unless an individual makes realistic, responsible indications to himself, he cannot perform realistic, responsible acts.

Summary

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Teaching Techniques for Institutionalized Blind Retarded Children

Since March, 1965, I have been employed at Gracewood working specifically with blind or visually handicapped residents who function on a retarded level. When I began working there, we did a survey and found approximately 160 residents who were blind or had no useful vision. One hundred-twenty of them were non-ambulatory.

These residents were found in all of the cottages, hiding in corners and under tables, trying to avoid physical contact with sighted residents. Their activities were limited to bus rides and they were not enrolled in any activities or school programs because of their multiple handicaps. No self-care skills had been taught and most of their needs were met for them by attendant personnel in the cottages.

□ My first step was to visit all of the cottages and try to get acquainted with the visually handicapped residents. Since it was physically impossible to work with 160 blind children at once, I evaluated and selected the 24 who exhibited the most potential for benefiting from extensive individual attention. I had no classroom or special place in which to work, so began by taking pre-school toys and equipment from cottage to cottage trying to engage the selected residents in activities and encouraging them to relate to me as a person. I talked to the attendants and urged them to let these visually handicapped residents try to feed and dress themselves and become more aware of their environment so that their mobility would improve.

I soon realized that these residents were not ready for structured learning activities. Pegboards, puzzles, etc., were useless. They didn't know commands and were hardly aware of themselves and the world. I had to go much lower to communicate, and began taking the residents out of the cottages. We went for long walks, even in the rain, felt the bark on trees, learned the difference in feel of sidewalks and grass, played with rocks and small animals, and smelled flowers. They learned to listen to cars, birds, airplanes, and the sound of human voices. Slowly, most of them became aware of the unsighted world in which they lived. In the cottages, they were now able to play with simple toys to improve their coordination and motor ability.

Questionnaires were then sent to institutions in the United States trying to find out if programs were being carried out for blind retardates, how they operated, what evaluation tools were used, and what progress had been made. Sixty-eight of these institutions had sufficient numbers of blind or severely visually handicapped retarded residents to respond to the questionnaire. Eleven of the responding institutions had separate living facilities for their visually handicapped retarded residents.

HANNAH RODDEN

Miss Rodden is a teacher at the Gracewood State School and Hospital, Augusta, Georgia.

The First Step Was To Get Acquainted

The handicapped residents slowly became aware of their world

□ Due to limited facilities and staff, most institutions have found it necessary to limit their programs to only a small portion of their visually handicapped retarded residents. This has also been necessary at Gracewood. I work with two groups of residents; those visually handicapped retardates who have the highest academic potential, and the youngest visually handicapped residents whose potential is unknown.

The programs for these two groups are necessarily entirely different. With the highest functioning residents, group work was aimed mainly toward their integration into trainable and educable classes on campus if possible, or toward developing social competence and a variety of interests if class placement was not feasible.

Several members of this group have now been accepted in classes and I have been able to accept new residents into my program. Acceptance by school personnel has now reached the point where visually handicapped residents who are admitted to the institution, and who have academic ability, are accepted directly into school without going through my program.

Because of this, I am now able to focus my attention entirely on the younger and the less able blind or visually handicapped residents. Most of my work with these residents was originally done in the living areas. One example is a teenaged totally blind girl who was living in a ward of hyper-active females. Sandra refused to wear clothes. She scratched herself and others frequently, and was on regular doses of tranquilizers.

Once she was allowed to come to "school," the ward personnel developed an entirely new attitude toward her. She was encouraged to develop self-help skills and was moved to a calmer living area. She is no longer abusive to herself or others and is not on medication.

I frankly feel that *what* I did in class was not as instrumental in making the change in Sandra, as the fact that there was a certain status in her being selected to attend class. Today her life is totally changed. She participates in all cottage activities, is totally independent in self-help skills, and talks in complete sentences. We are still fighting, and probably always will fight a battle to allow her to be independent because the sighted residents enjoy taking care of her.

Looking at Sandra walking across campus today with her head held high, singing a song in her beautiful soprano voice, and proudly smoothing down a pretty dress, it is hard to remember that only a few years ago she was a totally dependent, self-mutilating child who was destined for the most limited sort of custodial care.

□ Another example is an older resident who lost her vision after being admitted to Gracewood. This was devastating for her. We spent many long hours talking about blindness and the fact that many people have disabilities, but that it doesn't have to ruin their lives. After many tearful sessions, Elizabeth began accepting me and the other members of the class, even though she preferred to come and "watch" rather than enter into activities.

One day she decided to draw, and since she had grown up as a sighted person, she could picture what she wanted to draw. She said she needed a

Most Programs Limited to a Few Residents

One teenager was helped by going to school

An Older Resident Learned To Accept Her Blindness

ruler, a pencil, and some paper. She spent many sessions drawing line after line and erasing it. Finally, she has begun to participate and is one of the most talkative, well-adjusted members of the group. She also has begun to join and enjoy all of the activities of her cottage mates and offers sage advice to friends who get depressed.

Ronnie is another special student. Although he is legally blind he uses every little bit of vision he possesses to examine the world around him and develop fantasies from what he observes. He draws cartoons about situations which are traumatic to him, such as going to the doctor, and he also draws cartoon characters, such as Yogi Bear, and imitates them.

□ Ronnie has the vocabulary of a professor. He can explain the meaning of many professional terms, but it is very difficult for him to participate in group activities or to relate to other people. He would much prefer to escape into a dream world of his own choosing where he is charming and normal and where all people are perfect and kind.

We have tried to get assistance with goals for Ronnie from every source available, but to little avail. Ronnie is one of those rare individuals with interests and tastes far beyond his mental and physical capacity. Our program for him consists mainly of ignoring his fantasies and encouraging his attempts to face reality. For the few hours each week that he attends class he is a productive person with realistic goals. However, in his cottage he is still living in a dream world.

□ The last child I would like to mention is Ralph. Ralph is a severely retarded boy whom we found literally burying his head in the sand in the playground outside his dormitory. Ralph was reported to have been an extremely aggressive young boy who would "parrot" anything said. Then he seemed to give up the fight and started hiding from his cottage mates. He, like most of the blind children in an institution, probably grew tired of being the one that got hit when another child was angry.

Ralph still loves to hide under boxes or lie on the floor of our playroom in a corner, but he also enjoys very much being a part of the group. In fact, if for some reason he is not able to come to school, he raises quite a fit in his living area. There was much celebration the day Ralph first "parroted" something at the appropriate time. Now we are pretty nonchalant when Ralph makes a statement on his own about things he wants and notices. In our program, Ralph is toilet trained after many months of reminders, but not yet in his living area. Ralph still has many self-abusive habits, such as hitting himself and poking his eye, which we are trying to eliminate, but all-in-all he is a much more acceptable boy.

A little over a year ago, we gathered together all of the youngest residents on campus who have visual problems and evaluated them with the Maxfield-Buchholz Behavior Scale. We gathered toys and established a nursery school class for these youngsters.

There are seven little boys presently enrolled in the class. They ride a campus bus to and from school every morning from several different living areas. The boys all function on about a two to two-and-a-half year level

A Large Vocabulary, But No Ability To Relate

A Boy Who Buried His Head in the Sand

A nursery school was established

although their actual ages range from six to 11. The program is designed to enhance self-care skills, mobility, and socialization.

We have noticed dramatic changes in the students in all three focal areas. The residents are extremely mobile in the classroom. They have begun to interact with each other—even to the point of defending themselves and fighting over toys. They are learning to take care of themselves independently in the bathroom and, perhaps most basic of all and of major importance, most of them are now able to follow verbal commands. Many of their newly developed skills are being carried back to their living areas, but it is still extremely difficult for a young blind child to function adequately in an overcrowded ward of sighted individuals.

A proposal for a special purpose unit for the visually handicapped who function as severely retarded has been approved by the State Department of Public Health and is awaiting funding. We feel that a total program for this sub-group of residents which includes both living and training facilities is the only way we can achieve significant over-all gains in functional ability.

Students are learning mobility, self-care, and response to commands

Highlights of the Annual Convention of Blinded Veterans Association

The 24th annual convention of the Blinded Veterans Association (BVA), held in Philadelphia last August, was attended by 250 blinded veterans, their families, and guests. Speakers at the convention included the Rev. Thomas J. Carroll, director of the Catholic Guild for All the Blind, Newton, Massachusetts, and Rep. Thomas S. Foley (D-Wash.), newest member of the BVA's National Advisory Committee.

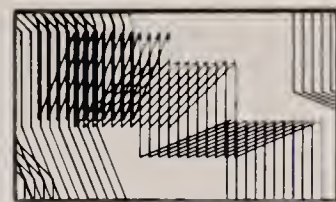
BVA's Achievement Award for outstanding accomplishment was presented to George Stocking of Miami, who is employed as a clinical psychologist at the Veterans Administration Hospital in Coral Gables, Florida. The 1969 Diener Award for outstanding activity on behalf of BVA went to Robert E. Bescoe of Philadelphia, newly-elected president of the BVA's Pennsylvania Regional Group. BVA's Outstanding Service Award was presented to William P. Cahill, executive secretary of the President's Committee on Employment of the Handicapped, in recognition of his long and devoted service to the integration of handicapped persons into the productive life of the nation.

The convention also elected new national officers. Julius D. Morris of New Britain, Connecticut, was elected president; Robert C. Ward of Seattle, vice-president; Otis Scott of Marion, Ohio, and Clyde Waugh of Miami were re-elected secretary and treasurer, respectively; the Rev. Thomas J. Carroll was re-elected national chaplain; and Gene Adler of Peoria, Illinois, was elected sergeant-at-arms.

Awards

New officers

Answers to Accreditation Questions



National Accreditation Council for

Agencies Serving the Blind and Visually Handicapped

Q. We are ready to start our self-study. When and how should we formulate the required statement of philosophy and program objectives?

A. In your self-study you will be asking such questions as: "How appropriate are the training and experience of the professional staff members?"

How appropriate for what? You will need a clear statement of your philosophy of service and your program objectives in order to answer many of the self-study questions. Therefore you will want to have a satisfactory statement approved by your board of directors or commissioners as soon as possible.

Begin with the statement of purpose in your charter, articles of incorporation, or enabling legislation. This statement is usually quite general. You will need to make it very specific. On page two of the *Self-Study and Evaluation Guide* is a checklist of points you may wish to include.

It is a good idea to involve several different groups in framing the statement.

The Lantern for June 1969, published by Perkins School for the Blind, describes the steps the school followed: "The statement . . . was prepared in a rough draft by the Director during the summer of 1968. This rough draft was circulated to Trustees and to all members of the staff. Many comments were received, most of which were incorporated into the final draft." The actual statement also appears in *The Lantern*. It gives not only the "what" but the "why" of Perkins' philosophy and objectives.

Remember: "An agency is evaluated in the light of its own stated purposes and objectives," and be guided accordingly!

Q. Our self-study reveals that we should make several changes—for instance, a new personnel manual, shifts in the chart of accounts our bookkeeper uses. Must we complete the manual and install the new chart of accounts before the on-site review is held?

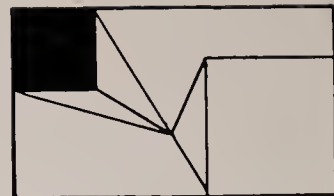
A. If you are developing new practices in accordance with the standards—but have not completed them—the on-site visit need not be delayed until you have the finished manual. Or if you have a schedule for changing over to the new chart of accounts, you need not wait until the change has actually been made.

The "Manual of Procedures," page three of the *Self-Study and Evaluation Guide*, states: "Not perfection but perfectibility, is sought. Deficiencies in a basically sound program of service do not rule out accreditation, provided the agency is willing to remedy deficiencies and gives evidence of ability to do so within a reasonable period."

What is your question about accreditation? Send it to Accreditation Questions, c/o National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, 84 Fifth Avenue, New York, N.Y. 10011. If it is of general interest we will try to answer it in this column, but, in any case, you will receive an answer.

"Answers to Accreditation Questions," prepared by the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, is a new feature in *The New Outlook for the Blind*. It will appear each month in this part of the magazine. Readers are encouraged to submit their questions about accreditation to the National Accreditation Council at the address listed above.

Letter to the Editor



Dear Editor:

In Miss Freund's article ("Teaching Art to the Blind Child Integrated with Sighted Children," by Colleen Freund, *New Outlook*, September 1969), she stated some basic premises with which I feel compelled to take issue. She repeatedly states that the blind child can and should do all the art projects that the sighted do. She does not make any distinction between those children who are partially sighted and those who never had any vision.

Better screening during the last years has established the fact that many children who are classed as legally blind have varying degrees of useful vision. These are able to do many tasks from which they were formerly excluded, and this is certainly as it should be.

The congenitally blind child, however, because he has no vision, cannot have a picture image of anything. He gains his knowledge of the world by other avenues. When he looks at an object with his hands he gains a multiple, sensory concept of it, not a linear one, nor a two dimensional picture. He does not braille a rabbit with

one finger but moves his hands over it, in all directions. He feels its nervousness, its warmth and softness, is aware of its odor and its ever-changing shape and muscles. Translating all this into a two-dimensional picture representation is impossible for him, since he has no way of judging what he would be doing. To ask a congenitally blind child to draw or paint is demeaning him because it puts him into a position in which he is dependent upon others instead of on himself. Judgment develops the self-image and that leads eventually to independence.

You can teach a deaf child the shape of notes, and the staff and show him how music is written, but no honest person would ask him to compose what he could not hear. He should work in a medium where he can experience, appreciate, and judge what he is doing.

No amount of class discussion about how the impressionists felt about the fusion of light and color can give a child who doesn't know these elements any idea of what happens in those paintings. Nor does such a child demonstrate his understanding of impressionist art by

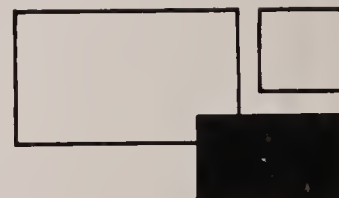
making daubs and dots with a brush in the dark.

Light and shade and color are important elements of visual art. To one who cannot know these things there can be no meaningful use of them. All children should understand the mechanical steps and skills involved in the use of various art media.

But they must also understand that these alone never make art. Art is a high order of communication in which judgment and sensitivity to one's media are the chief ingredients. It seems to me that a teacher must help the congenitally blind to accept his handicap by not having him try to perform in areas where he cannot experience, evaluate, or honestly enjoy his product. Acting like a sighted person in such a situation develops insecurity and a double standard. Each child has gifts. Why not work on those which can be meaningful and where he can excel?

Charlotte Haupt
New York, New York

News in Brief



■ The Catholic Guild for All the Blind, Newton, Massachusetts, has named Marvin F. Brotman as director of community relations. He will be in charge of public relations and development activities of the Guild.

■ Fight for Sight, Inc., New York City, has discontinued its designation as the National Council to Combat Blindness, Inc. All communications and credit lines in publications should bear only the title, Fight for Sight.

■ News on tape cassette equipment and reading materials is now available in the *Tape Cassette Council Newsletter*, published by Tape Cassette Systems, Inc., 342 Madison Avenue, Suite 572, New York, New York 10017.

■ The President has signed S.1611, the bill creating the National Center on Educational Media and Materials for the Handicapped. As P.L. 91-61, the new law provides for the establishment and operation of the Center at an institution of higher learning to coordinate activities related to the development of educational media and materials and to play a significant role in the development of such materials. The principal difference from the bill as introduced is the elimination of the requirement that the institution of higher education be in Washington, D.C.

The authorization of appropriations is \$12.5 million for fiscal 1971, \$15 million for fiscal 1972, and \$20 million for fiscal 1973 and each year thereafter.

■ Gordon H. Seger, 62, who retired in February 1969, as associate chief of the General Medical Sciences Division of the National Institutes of Health, died October 12, 1969, in Bethesda, Maryland. Mr. Seger was at one time chief of extramural programs at the National Institute of Neurological Diseases and Blindness.

■ Secretary Robert H. Finch has appointed Edward Newman as commissioner of the Rehabilitation Services Administration, Social and Rehabilitation Service, Department of Health, Education, and Welfare. Born in New York City in 1934, Dr. Newman attended Drew University and Case Western Reserve University where he received his master's degree in social administration. He received his Ph.D. in community planning from the Florence Heller Graduate School for Advanced Studies in Social Welfare at Brandeis University in 1964.

He has worked and written extensively in the fields of vocational rehabilitation, mental retardation, and community planning for social welfare and vocational rehabilitation programs. Rehabilitation Services Administration handles HEW's program of vocational rehabilitation which serves the nation's physically and mentally disabled.

■ Three new members have been appointed to four-year terms on the Advisory Council of the National Institute of Neurological Diseases and Stroke. They are Mrs. Ellen Grass, senior vice-president of the Epilepsy Foundation of America; Dr. William Hardy, director of the Hearing and Speech Center at Johns Hopkins Hospital, Baltimore; and Dr. Bronson Ray, clinical professor of surgery (neurosurgery) and director of the Department of Neurological Surgery at the New York Hospital-Cornell Medical Center, New York.

■ The following three publications of the U.S. Department of Health, Education, and Welfare may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

—*Fact Book: Office of Education Programs.*

—*Financial Assistance Programs for the Handicapped.*

—*A Summary of Selected Legislation Relating to the Handicapped 1963-67.*

■ The 1969 Burroughs Wellcome Fight for Sight Student Fellowship Awards went to Warren Broughton, George Washington University; Victor Sih-Chiun Fan, University of Minnesota Medical School; Harry A. Quigley, Wilmer Institute, Johns Hopkins; and Robert Rogers, New York Medical College. The William N. Creasy Award went to Everett Trevor, Barrow Neurological Institute, Phoenix.

■ Charles Hedkvist of Sweden was elected president of the World Council for the Welfare of the Blind at its fourth quinquennial assembly held in New Delhi, October 8-18, 1969.

■ Dr. Thomas E. Caulfield, Jr., 58, chief of the Department of Psychiatry, Catholic Guild for All the Blind, Newton, Massachusetts, died October 8, 1969, in Boston. A noted authority on rehabilitation of the blind, Dr. Caulfield had been with the Guild since 1954.

■ Dr. Wilfred D. David has been appointed executive director of the National Society for the Prevention of Blindness, Inc., replacing Dr. John W. Ferree who has retired after 10 years in that position. Dr. David leaves a 25-year career with the U.S. Public Health Service.

■ The Pilot School for Blind Children has a new director, Robert C. Heaton, and a new address, 3301 Seventh Street, N.E., Washington, D.C. 20017.

Errata

In the article "Tactual Maps for the Visually Handicapped: Some Developmental Problems" by Joseph W. Wiedel (*New Outlook*, March 1969), the publisher of a booklet (cited in footnote five) was listed incorrectly. The booklet was prepared by the Associated Blind, Inc., New York City, not by Recording for the Blind.

Colleen Freund, author of "Teaching Art to the Blind Child Integrated With Sighted Children" (*New Outlook*, September 1969), wishes to correct an inadvertent misrepresentation due to omission. The are projects described in her article were developed at Jack London High School, Wheeling, Illinois.

Coming Events

April 19-25 Council for Exceptional Children, 48th Annual International Convention, Chicago.

April 24-25 President's Committee on Employment of the Handicapped, Annual Meeting.

June 1-5 World Federation of Occupational Therapists, Fifth International Congress, Zurich, Switzerland.

June 7-11 Special Libraries Association, Detroit.

August 17-21 International Congress on Education of the Deaf, Stockholm, Sweden.

Sensi-Quik

The Touch Cane for Walking
Faster with Safety



Sensi-Quik's contour handle arranges the fingers for quick down-touching and accurate, rhythmic side motion with thumb and finger, minimizing wrist action. The nub at the handle's elbow rides in the crotch of thumb and forefinger, providing purchase for fingers when the hand perspires or when it rains. The tapered-off end reduces "tripping hazard" on crowded sidewalks.

Made of flexible fiberglass, tipped with diamond-hard tungsten carbide, the Sensi-Quik touch cane gives the traveler a sharp signal and alerts other pedestrians to his approach.

The cane's working tip, a carbide disk one-half inch in diameter, gives the user a special advantage in the subway. As he moves across the loading platform toward the train, the carbide tip glides easily over the rough concrete surface, giving off a "rippling" sound. Other riders, alerted by this sound to the traveler's approach, are more likely to help him get aboard.

The carbide tip, originally developed in 1956 for the bamboo model of the Sensi-Quik, is now available for the fiberglass model, which was introduced in 1965 and has been continuously improved ever since. The shaft of the fiberglass cane is tubular in construction, giving adequate strength within necessary restrictions in weight.

The fiberglass model comes with either crook or contour handle and either carbide or replacement steel tip. The bamboo model, still available to those who prefer it, comes with polished wood crook handle and carbide tip.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact

Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

Mr. Franklin S. Clark
The Go-Sees
166 East 92nd Street
New York, N.Y. 10028

THE NEW Outlook FOR THE BLIND

February 1970 Volume 64 Number 2

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The Team Approach in a Rehabilitation Agency for the Blind

To many of us the term "team approach," may sound empty, because we have heard it too often. But the idea behind the term should be of great concern to every one of us. For it has to do with how we, as rehabilitation workers, relate to each other and how we do our work. It influences the atmosphere in which we spend all our working hours, and colors our feelings about ourselves as workers. I find it a challenge, therefore, to try to put new meaning into the old words, "team approach."

To do this, I shall first try to find out how the team approach came to be the accepted approach for a rehabilitation setting such as ours, and what its meaning is. Then, I shall examine how teams function in general, and try to apply the findings of this examination to the field of rehabilitation.

□ How did the "team approach" come to be adopted as appropriate for rehabilitation in general? Unfortunately, we do not know. I can only present my own theory, based on what I know about the history of rehabilitation. As you know, rehabilitation as a separate field came into being during World War II, as a result of the efforts of several physicians, notably Dr. Howard Rusk, who now heads the Institute of Physical Medicine. These physicians inaugurated comprehensive rehabilitation services when they found that medical services alone were not enough for orthopedically handicapped war veterans. Of course we know that, since then, rehabilitation has become a vast field, extending services to persons in all walks of life, and with all kinds of handicaps.

But let us not forget that rehabilitation was a brainchild of the medical profession, and we all know how doctors function. By and large, they are not used to making suggestions or participating in lengthy discussions. Their way of operating is to *give orders* to the patient, either directly or through a hierarchy of residents, nurses, and aides. Now, suddenly, because of the complexity of the problems, the doctors had to deal with therapists, social workers, psychologists, counselors, and educators—in other words, with experts from other disciplines, who would not graciously obey their orders.

I hypothesize that, one fine day, some doctor decided that, since he needed the help of these other disciplines, he had better learn to play their game. Maybe he recalled some other games, such as football or baseball, and this recollection led him to realize that everybody should work together as a team toward the goal of helping the disabled patient. To my knowledge, in rehabilitation centers that deal with the first—or medical—phase of rehabilitation, all kinds of experts will raise their voices, but there is no question that the leader is always, and without any doubt, a physician. And, of course, at that stage, this is how it should be.

EVA WILE

Mrs. Wile is senior rehabilitation counselor of the New York Association for the Blind.

How Did the Team Approach Come to be Adopted for This Field?

Rehabilitation was the brainchild of the medical profession

In the medical phase the physician always gives the orders

But most of us are involved with the second stage of rehabilitation—which consists of personal adjustment and preparation for training and placement. How does this “team approach” apply to our situation? We function exactly like any other agency concerned with the second phase of rehabilitation, which means that we are concerned with personal adjustment and preparation for the following phases of training and placement. The main point is that the person we see in our agency has ceased to be a *patient* and has become a *client*. He is no longer immobile and dependent, being encouraged to rest. He is beginning to take more or less vigorous steps towards independence. Yet, as we all know, very few of our clients are ready to find their way without a great deal of guidance and help. New staff members, *especially those who come from the field of education*, sometimes tend to think that we should allow our clients to arrange their own program, as they would do in an adult education center. But, after working here for a while, we understand that, by doing this, we would put too heavy a burden on their shoulders. For, as a rule, our clients have little more than a vague notion as to the direction in which they want to turn, and it is our job to map out the first roads.

□ Let us then search for a specific kind of “team approach” to fit our own situation. We are a group of experts in various fields, with a common purpose. To be effective our efforts have to be coordinated in such a way that the client receives the necessary support, while he grows toward independence. To achieve this kind of coordination, we need a special kind of model; *neither the semi-military approach of the hospital, nor the completely free one of an adult education center will serve our purpose*. We need a model that can help and inspire us, something more definite than the fuzzy notion conveyed by the term “team approach.”

Most commonly, we find the word “team” in the world of sports and in the field of science. And, indeed, the image of a team of ballplayers or scientists provides us with ideas of discipline and goal direction quite applicable to our setting. For are we not, like scientists, trying to find solutions by searching for data and piecing them together? And are we not, like ballplayers, coordinating our efforts in order to win a victory?

Yes, we might say, we are doing all this but it seems that our work goes beyond this, that it has yet another dimension. We are helping our client to mend his shattered self-confidence. We are guiding him toward a new path which he can learn to walk on his own. Can we not say, then, that we are a group with a vision, and call the work we are performing an art?

□ If we accept this, then we can let our imagination wander beyond the walls of hospitals, beyond the sport arenas and the laboratories, and look instead into the world of the performing arts, where, instead of teams, we find ensembles, groups, bands, and orchestras.

How can we describe the essential difference between, say, a team of ballplayers and an orchestra? It seems that when we imagine a team of ballplayers, we think of single forces, coordinated and disciplined for a common effort. This would be in accord with the original meaning of the word “team” which derives from an old English root signifying “a line of harnessed an-

How does the team approach apply to the second stage of rehabilitation?

**“We Need a New Model
for Our Approach”**

Could an Orchestra Serve as a Model?

imals." On the other hand, as we visualize an orchestra, what comes to our mind? We may think of the word "harmony," which derives from a Greek word, meaning "to fit," "to join." Thus, the members of an orchestra join with one another, they fit themselves into a whole to create music. Frankly, I prefer this image to that of the team, because it stresses the human value of freedom—the freedom of will, the freedom of choosing a goal, the freedom of joining with others in working toward a goal.

How does an orchestra function? We might assume that it is the conductor who brings about the harmony. But there are small chamber orchestras that play without a conductor; one member gives a few cues, the others follow and the music sounds fine. At a concert not long ago, I was watching the first violinist fiddling away, when suddenly I found myself wondering what would happen if, on the spur of the moment, he put down his violin, pulled a piccolo out of his pocket and began to play on it. Then I imagined the drummer getting the idea of doing a solo, the woodwinds changing the rhythm, and the French horn playing in a different key. Suddenly, I realized how bedlam can result if one single member of the orchestra, for one single moment, gets it into his head to "do his own thing."

□ Now, by what means does an orchestra create harmony, as opposed to bedlam? Obviously, there has to be some kind of score, and the players have to know how to play their parts. But there can be no harmony unless every player is "*tuned in to the whole orchestra*," intent on joining his voice with other voices. When the players are focusing on a common goal, they form a community. I would call such a community a living thing, an organism with a bloodstream called communication—which means the ceaseless and rapid flow of messages in all directions. There can be harmony only where there is an easy flow of messages, while a stoppage at any point can have disastrous results.

But, what does a theoretical digression on harmony have to do with the operation of a rehabilitation agency? We do not run such an agency to make music; we have nine-to-five jobs, which easily become routine. We are working for money, and we are not always satisfied. Above all, we know that there are tensions within our teams because in reality there does exist a *hierarchy of power*. While in theory everyone has an equal voice on the team, those members whose job it is to plan, coordinate, and supervise also happen to have the power to hire and fire.

And yet if we look at our work as more than just a routine, if we want to derive some satisfaction and joy from it, the image of an orchestra may be helpful and the words "harmony" and "community" may have a great deal of meaning. How could we use these concepts?

□ Let us for a moment imagine ourselves in the role of a director or manager who is hiring a new staff member for a rehabilitation team. Let us say that the man is qualified in his field, but has never before worked in rehabilitation. How would we explain to him the team approach of our work?

First of all we would make him understand the difficulties and responsibilities involved. We would emphasize that we have to work closely in order to

Communication Is the Basis of Harmony

Explaining the Team Approach to a New Applicant

achieve our common goal, and that we have to function as a community sharing our problems, our failures, and our triumphs.

We would go on to explain that, as a client passes through a program, though all of the teams remain concerned with him, different teams come to the forefront at different times (just as, to pursue our musical analogy, some groups of instruments are playing while the others are resting, though all players continue to pay attention to the score). The first team the client meets is, of course, the intake team of social workers and psychologists who, together with medical and psychiatric consultants and workers, determine whether and how a client can profit from our services. The central person in this team is the intake social worker, who interprets our services to him, and in turn reports his observations to the members of the team, who then decide on the steps to be taken. If the client is admitted, the social worker summarizes his findings and presents them to the rehabilitation team, who plan and execute evaluation, prevocational, and training programs.

Once the client has entered a program, the intake team recedes into the background, to stand by when needed, while the rehabilitation team takes over. This team has two main groups. One of them is composed of psychologists and counselors, who help the client learn to understand himself as a person who has suffered a severe loss, as a person who has to find new values, plans, and attitudes to be able to function in his family, in his community, and in the world of work. The members of this group, which we might call the attitudinal group, apply their skills of testing, counseling, and therapy to the patient's problems. The other group is composed of instructors, who use their skills of teaching in a variety of areas, such as communication, personal management, manual arts, and mobility.

The central person on the rehabilitation team is the rehabilitation counselor. Regardless of the type of services a client may receive, he is always assigned a specific counselor, whose role is to serve as spokesman for the client and as interpreter between him and the members of the team, between him and the rest of the world—the state and local agencies, and whoever else needs to be contacted on his behalf. Unless every member of the team recognizes the counselor's function as a communication center and clearing house, communications will break down and the team will be unable to function.

□ At this point, our would-be staff member may be rather bewildered. How, he will ask, do we go about making plans and schedules? Who makes the decisions? So, to dispel his confusion, we shall sum up the idea of the team approach, as we understand it, with five *brief rules*:

1. Like a player in an orchestra, play your part, and only your part, even if it forces you to be silent at times. For instance, if you are an instructor, do not try to be a counselor; if you are a counselor, do not try to be a medical worker or a therapist. If the client tries to make you overstep these boundaries, either refuse to do so or inform your co-worker when, for special reasons, you assume part of his role. Incidentally, in order to be able to recognize your boundaries, you have to be familiar not only with your own job description, but with that of everyone else on the team.

Different teams come to the forefront at different times

Composition of rehabilitation team

The rehabilitation counselor as center of communication

Using an Orchestra as a Practical Model

2. We must share information about the client among ourselves as members of a team. But at the same time he must be able to feel confident that we, as a community, will keep such information from the rest of the world.

3. It is an essential—not an optional—part of the job to communicate, for *communication is the bloodstream of the organism called "team."* You must constantly give and take information about the client you are working with, for his needs change constantly. This means reading and writing reports, listening and speaking in meetings, maintaining informal contacts with staff members—all this without end.

4. (This rule would apply if our would-be member was going to assume a *supervisory* position.) Obviously it will be your responsibility to see to the smooth running of the program by making plans, rules, and decisions. In this role, it will be easy for you to forget that you are still, and above all, a member of the team. This means that, since communication is of the utmost importance, you have the added responsibility to speak and to listen. You must not only speak but make sure you are heard. And you must not only listen, but invite opinions and suggestions, and set up permanent machinery for the exchange of ideas. Every time you surprise your staff with a ready-made decision, every time you act in an authoritarian and arbitrary manner, *you cease to be a member of the team*, and you stifle self-discipline, initiative, and enthusiasm.

5. It is necessary that we, as a team, work together in harmony, not only because we waste our energies when we fight and bicker, but also because we harm our client if we create a climate in which he has reason to doubt that we are making a concerted effort for his benefit. Quite obviously, there are tensions within our team. We all have our difficulties and shortcomings. A group of performing artists may have money trouble, or dissent over the casting of roles and the moods of the leading lady. But when the curtain rises, these things are forgotten. In the same way, whenever we sincerely focus on the needs of our clients, we contribute to the harmony of our team.

□ Under the barrage of these rather blunt rules, our would-be employee has probably begun to shrink and to look more and more dejected. But maybe towards the end, he has perked up a bit. Maybe he says: "I began to feel better when you mentioned the words *tensions* and *difficulties*, because your emphasis on *harmony* seemed to have a most dreamlike and utopian quality."

And we might answer him that, indeed, the reality of our daily work bears only a faint resemblance to this dream of harmony. Yet only if he understands what we are aiming at when we speak of the team approach can he help to make this dream come true. And, at this point, we would send our man home to think things over.

To sum up, I would say that the team approach still appears superior to all other approaches. Even if, due to our human short-comings, we often see it functioning poorly, it remains an ideal worth striving for.

The Reality of Teamwork and the Dream of Harmony

Sunrise Project for the Blind

There has long been an interest in the blind at the Austin State School, a facility operated by the Texas State Department of Mental Health and Mental Retardation. The Sunrise Project, a special program for blind children at the school, however, did not begin to become a reality until the spring of 1968. Stimulated by the team-approach philosophy of the previous superintendent, Dr. Phillip Roos (now director of the National Association of Retarded Children), the staff of the Austin State School planned the Sunrise Project in an attempt to re-direct the tendency of blind mentally retarded children in a residence facility to be non-ambulatory, severely deprived (sensorially, physically, and socially), and without self-help skills.

□ Under the guidance and direction of the nursing service of the school, with support provided by consultative staff of the State Commission for the Blind, admission criteria were established for the project. In the fall of 1968, 20 children, seven to 17 years of age, were placed in Sunrise Hall. These children, it was determined, were most in need of services and could benefit the most from them. Based on psychometric data, their levels of functioning placed them in the severe or profound range of mental retardation, but, based on historical records, there appeared to be no contraindications for improvement. After several months in the project, a plateau in the behavior of the children was reached; a few children began to regress. It was at this point that the State Commission for the Blind was asked to become directly involved in the project. A dialogue was then established between the administration of the Austin State School and the Commission for the Blind. From this dialogue it was decided to seek a special grant to determine the feasibility of providing intensive, comprehensive services to these children at a relatively early age in order to make their future vocational rehabilitation a more realistic possibility. Application was made and the project was approved and funded in early 1969. (This direct transfer of vocational rehabilitation funds from the state agency to a school operated by another state agency is perhaps one of the most unique aspects of the story of the Sunrise Project.)

As of April 1969, the Sunrise Project staff consisted of 22 full-time and one part-time supportive therapists, three degree-level teachers, a registered nurse, a research assistant, a psychologist, an occupational therapist, a speech therapist, a part-time pediatrician, a part-time social worker, a secretary, and a director. It is hoped that future staff will include three more teachers, a peripatologist, and 10 to 15 more supportive therapists. Such additions would bring the project to full staff and allow a one-to-one staff-to-child ratio. If this seems an excessively high number of staff for 24 children, it must be remembered that

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Two State Agencies Involved in Sunrise

Large staff needed

a program of comprehensive services in a residential setting means a 24-hour day, seven days a week, that is, three shifts with extra personnel for days off, illness, and vacations.

As all activities, sleeping, playing, and learning, take place within Sunrise Hall, the children have the advantage of having only one staff and one environment and this environment can best be described as therapeutic. It, as well as the plan of services, is structured for the individual needs of each child. Each teacher and a small group of therapists are assigned to the same group of children. The teacher is responsible for the documentation and case recording on each child, including both daily and weekly evaluations of classroom participation.

Several unassigned therapists and specialists work with all the children. They, as well as supplementary personnel from the Austin State School staff, recreation and physical education workers, foster grandparents, the chaplain, and volunteers (including University of Texas students), are also asked to submit weekly reports to cover their area of activity. The case recording and teaching are evaluated by the nurse, the psychologist, and the research assistant. At least once a month, each child's progress is reviewed in a general staff meeting with his therapists and tentative recommendations for each child's lesson plan are made. A core administrative staff meets each week to identify problems and to guide communication.

As a part of this team approach, an effort has been made to include the parents as a part of the team. "Open houses" have been held several times and will continue about every eight weeks. In the interim, the social worker keeps the parents informed of the child's development. In addition, a bi-monthly newsletter informs not only the parents, but also educators, friends of the project, legislators, and others, of the activities of the project.

□ This is the outer, most visible part of the Sunrise Project, staff, organization, mode of operation, and physical environment. More important, however, is the atmosphere, how Sunrise functions, its principles, its philosophy. Briefly, this aspect of Sunrise is embodied in two beliefs. First, each person in the project, both staff and children, is a unique individual who has a right to develop at his own rate and in his own way. The second belief, derived from the basic concept that a crucial factor in the development of a child is his relationships with the adults around him, is that the personal beliefs and attitudes of adults *do* affect children and *do* influence their development.

From the first belief comes the dedication to individualized education at Sunrise that relates to the immediate world of the child and explains that world to him. This orientation to the child results in his having a greater sense of security within his immediate world of self, a security that both protects and challenges him and that allows him to move beyond it. To pursue such a goal properly, of course, requires that the relationships formed between staff and children, both individually and collectively, be based on mutual acceptance, sincerity, respect, and honesty—in a word, love. This, of course, is part of the second belief and because the quality of relationships at Sunrise depends to such a large extent on the staff and their individual personalities, extra pains

The Sunrise environment

Evaluation and review

Parents a part of the team

The Sunrise Philosophy

Sunrise is child-oriented

are taken to screen and evaluate persons applying for positions on the Sunrise staff. The quality most sought in these individuals is the ability to relate to others, to become involved. Academic qualifications and previous experience are, naturally, considered, but the personality of the individual and the extent to which his verbalized beliefs are integrated into his personality are more important. The work of the Sunrise Project requires the whole person, not just the outer person.

□ How then is the selection of staff carried out? First of all, no formal applications are taken. Each applicant is asked to spend some time with the staff and the children on a volunteer basis. After a few days of observation (the applicant of the staff, the administration of the applicant) and informal, social interaction, a great many things are revealed and discovered. Often the applicant finds, for example, that working with mentally retarded blind children involves more frustration than he is able to handle. It may be discovered that personal problems of the applicant might interfere with his free interaction with children and staff. In any event, it is usually possible, through conferences between the staff and the applicant and their evaluation of the applicant's experiences in the project, for a decision, mutually agreed upon, to be reached.

Both old and new staff endeavor, through constant evaluation and training (T) group sessions, to keep the two fundamental beliefs of the Sunrise Project ever in the forefront in planning and carrying out various programs and in day-to-day activities. This common basis of belief provides a certain coherency of communication that allows all involved to work through the inevitable ups and downs faced by every organization. In addition, this common basis of belief seems to have given the children a deeper sense of security and of being loved than is usual in an institutional setting and may account for the great progress they have made in their first year in the Sunrise Project.

Staff Selection

The value of having a common basis of belief

Report on Progress in the Development of Visual Prostheses

Strides have been made in many directions during the last decade in designing prosthetic devices to increase significantly the information a blind individual can gain of his environment. Among the many significant devices and systems experimented with, mention should be made of aids which detect features of the environment and present these in coded form tactually and auditorially; present a tactual equivalent of the output of television onto the skin of the back; present the tactual equivalent of a sensing device to the skin of the forehead; translate the print to text and present a spoken representation of this text; or translate the printed page directly into braille and emboss it through the use of a high-speed computer and its attached printer. This last achievement is of special interest to rehabilitation workers since it has opened employment opportunities for blind individuals to such an extent that there are now hundreds of blind programmers employed throughout this country, Canada, and Western Europe. (In fact, there was a technical convention of blind programmers in Cleveland in October 1969, sponsored by the Subcommittee on Professional Problems of Blind Programmers of the Association for Computing Machinery.)

In spite of many advances in our basic and applied knowledge of sensory processes, there persists a feeling that more ubiquitous devices of a general purpose character can be developed to meet most of the reading and navigational needs of blind and severely visually-impaired people. The thought persists that we should be able to develop a visual prosthesis: a device or a system of component devices capable of dealing in real time with much of the information that a sighted person gains through his visual channel (estimates vary from 60 percent to 90 percent of the contribution of the visual channel to total information input through all the senses). Even five years ago the possibility of developing such a system seemed doubtful indeed. In spite of these doubts, exploratory work was supported through the National Institutes of Neurological Diseases and Blindness (now renamed the National Institutes of Neurological Diseases and Stroke), the American Foundation for the Blind, the Vocational Rehabilitation Administration (now renamed the Social and Rehabilitation Service), and the Association for Computing Machinery (the professional association of computer scientists).

Exploratory work about the visual prosthesis has been based predominantly on the fact that electrical stimulation of the central visual structures, and especially the surface of the visual cortex, is capable of inducing phosphenes—even on totally blind individuals. A phosphene is essentially an illusion of light. As such, it can be used as an elementary visual experience on which

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Doubts about visual prostheses exist, but work continues

Electrical stimulation of visual cortex induces phosphenes

more complex pictures can be built. Phosphenes appear in many forms: large areas of light, pulsating bulbs, streaks, and so on; but with punctate electrical stimulation, the experience is of stars in the sky or, in the more prosaic description of one person, like points of light about the size of a grain of rice held at arm's length from the eye.

□ Recent evidence of the ability to induce phosphenes that are stable has encouraged the search for advanced materials and technology to improve this visual experience. The development of better inert materials for electrodes, the potentialities for the development of miniature circuitry, the creation of better understanding in coupling technology to the system-leads, and, above all, the ability of logical circuitry (computers) to interpret patterns of stimuli and present them in some desired organized fashion to a substitute perceptual system, has provided encouragement for further work. The potentialities are now patent for producing an independent prosthetic device that could be used by some now-blind persons as a general visual prosthesis and by other blind persons as a supplement to other aids or systems which rely on tactual or auditory displays.

A number of visual scientists, engineers, computer scientists, rehabilitation specialists, and professionally-employed blind persons joined recently in a meeting to explore these potentialities at the Center for Continuing Education, University of Chicago. This second conference on visual prosthesis was sponsored, as was its predecessor, by the Subcommittee on Professional Activities of Blind Persons of the Association for Computing Machinery. This conference was a follow-up to an unpublicized first meeting, which was held in 1966, at Endicott House, Massachusetts Institute of Technology. At that meeting, some 30 scientists from the fields of visual physiology, engineering, and computer science met to consider the avenues open to aid the development of a direct visual aid. The report of the meeting was not publicized, but a number of recommendations growing out of the discussion were widely distributed. Although opinions were divided on the possibilities or desirabilities of developing a visual prosthesis, there was consensus on the realization that some experiments involving direct implantation of an electrode array were not only inevitable but desirable and ought to be performed.

□ Such an implantation has been done since that meeting by Brindley and Donaldson in the United Kingdom. Brindley's reports show clearly the feasibility of implanting an electrode array as an essential component of the visual prosthesis. His brilliant and daring work was partly responsible for calling the second conference on visual prosthesis.

This second conference on visual prosthesis was funded by the Association for Computing Machinery and with grants from the American Foundation for the Blind, the National Institutes of Neurological Diseases and Stroke, and the Social and Rehabilitation Service of the U.S. Department of Health, Education, and Welfare. This second meeting concentrated on new discoveries and developments which made experiments (from which a visual prosthesis could be developed) seem far more profitable to conduct than had been the case as recently as three years ago.

Recent Advances Very Encouraging

Conferences on visual prosthesis

Experimental Implantation Done by Brindley and Donaldson

□ The single most important event prior to the conference was Brindley's implantation of an electrode array of 80 points on the visual cortex of a nurse who became blind in adulthood. Brindley demonstrated that the screen of phosphenes (not unlike a theater marquee) can be created by stimulation of such an implanted array; that the phosphenes would be maintained and stabilized spatially; that the threshold for stimulation remained fairly constant; that—and this is most significant—simple patterns can be elicited from this stimulation; that an apparent connection between points can be generated if they were stimulated concurrently; and, finally, that the differences in apparent brightness were related reliably to the differences in frequency of stimulation. (Brindley could not attend the conference in person because of complications in a recent experiment. He addressed the participants through a telephone link and participated in a lively discussion for a section of the conference.)

Brindley's success promises solution to the difficult problem of the composition and construction of a suitable electrode array. It is virtually agreed that even the minor dangers entailed in implanting electrodes are not to be entertained unless we can be assured of a significant increase in information transfer across them. This implies the implantation of an electrode array with a great many contacts. Platinum (or platinum-iridium) embedded in teflon seems the material of choice; its rate of erosion in use and in vitro is less than that for any other material. The material, however, is difficult to work with, it does not adhere easily to the teflon, and the associated leads make for considerable bulk. There is also some question about the tolerability of the temperature rise following the relatively large currents required for the array with multiple leads. These problems may yield shortly to two recent advances in the art.

□ The first is the possibility of using small computers to format "pictures" on an array of phosphene points and to treat the array as a screen on which "animated cartoons" are shown. Work done already shows what the product of such processing would look like. Dr. Knowlton of Bell Telephone Laboratories and my associates and I have shown that it is possible to use computers to format pictures and to project them upon an array of points treated like a screen of phosphenes. Letters and/or pictures can be recognized from the display. I have pushed especially what I call the "picket fence" principle. When the array of phosphenes is too irregular or sparse to permit showing a picture in its entirety, the phosphene screen may be treated as a screen with holes in it, behind which a picture moves back and forth. The picture appears just as the landscape behind a picket fence becomes visible as we move past the picket fence. The implications of this work are extremely important because it may not be necessary to achieve the dense array of phosphenes to form useful images. In this way much of the electrode problem may be circumvented.

□ The second advance again is a direct consequence of Brindley's work. He has shown that implantation of electrode arrays (in baboons) does not result in adherence of the electrode array to brain tissue. Rather, a membrane of a

Results of Brindley's Implantation

Composition and construction of a suitable electrode array

Using Small Computers

Implanted Electrode Arrays Could Be Replaced

thickness of less than 80 microns grows over the electrode surface and adheres to the array but not to the brain tissue. This result implies that it would be possible to remove electrode arrays when they fail or wear out and to replace them with improved versions. The ability to change to a new electrode or to remove it entirely implies the projected use of active microelectrodes. This second advance may also diminish to some extent the important ethical issue involved in implantation of an experimental device in a human being. Many scientists would hesitate to implant an early model of an electrode now when there is hope that in a few years a better model may be available. But if there is the possibility of removing an electrode and eventually substituting a more advanced model for it, the decision to turn to human trials becomes easier to make. Because of the possibility of eventually replacing the initial electrodes, some scientists (as Drs. Vaughan and Schimmel of Albert Einstein College of Medicine) have undertaken a design for 1000-point contact electrodes for experimental implantation.

□ On the basis of information exchanged at the second conference on visual prosthesis, it is possible to hope that a useful visual prosthesis can be developed in the next 10 or 20 years. Designs for systems were, in fact, presented at the meeting by Drs. Vaughan and Schimmel (Albert Einstein College of Medicine), Dr. Marg (School of Optometry, University of California, Berkeley), and others, including our own laboratory.

All the systems presented were comprised of four components:

The first component is a camera. This may be a series of sensing elements which conduct simultaneous impressions; it may be an adapted television device; it may be a sonic or infra-red device to detect signal reflections through emitted heat from the environment; or it may be a combination of such devices.

The second component is a logic circuitry (or a small digital computer) to translate sensed data into a form permitting rough prerecognition of desired features of the environment.

The third component is an additional special purpose computer to reformat (or "preprocess") sensed data for transmission to the display system (in the case of implants, to the electrode array which generates a punctate phosphene screen). Of course, the same miniaturized computer would be used to recognize as well as to reformat information supplied by the camera.

The fourth and final component is the display system. In the case of a cortical implant, it would be a multiple contact electrode which, with its supporting circuitry, is embedded in the skull, or at least within the boundary organ of the skin. Sensing devices in the supporting digital logic hardware are contained in another, unobtrusive, package. Radio frequency signals transmit information to the electron receivers.

One conclusion became apparent to members of the conference, namely, that visual prosthesis is a supplement to the development of other sensory aids to the blind. Thus, a prosthesis utilizing the illusion of light extends and supplements other aids. Moreover, the imposing problems presented in infor-

Useful Visual Prosthesis in a Decade or Two

The four components of a visual prosthesis system

Visual prosthesis will supplement other sensory aids

mation transmission across a missing vital link are so complex that solutions to them are frequently quite general. For example, the work of Dr. Stockham (University of Utah, Salt Lake City) in enhancing the signal/noise ratio of visual displays, including pictorial representation, is applicable to both the problem of preprocessing visual signals for presentation to a punctate phosphene screen as well as to the design of better "low vision" aids. The enhancement of Mach bands, for example, through the use of Stockham's models, could augment the effort to provide an enlarged television screen display of a printed text for the visually impaired.

Another example of the generality of applicable technology is the preprocessing of images (in the sense described above) for presentation through a tactile display through the hand, the back, or the forehead. I would suggest that preprocessing could serve as a simulation function for many sensory aids, implying feeding of a prosthetic display device by a computer rather than by an actual camera. In this way the efficiency of the proposed device can be assessed with great convenience somewhat in the same way as a utility company learns about the best way of installing additional services without interfering with the existing system. For such simulation a punctate screen of phosphene points is a substitute visual system in the same sense as is a set of skin contacts or a low visual aid for the remaining retinal structure.

□ In summary, we can say that as a result of recent work in implanting visual prostheses in correlated work in visual physiology, data processing, and materials technology and in the development of sophisticated simulation techniques, we have approached several steps closer to a vantage point from which we can state the conditions under which a reliable visual prosthesis in the armamentarium of sensory aids has been clarified as a result of the conference and the interest of the scientific community in the development of such a system has been stimulated. It is significant that Dr. MacNichol (the new director of NINDS) has made our computer program for simulating the output of a prosthesis available to scientists at the National Institutes of Health as well as members of the newly-formed National Eye Institute. It is also obvious that we can sustain scientific interest in the problems involved in the development of experiments toward a visual prosthesis, because of the simultaneously human and personal involvement of researchers in alleviating the problems of blindness.

Ed.'s Note: This paper was adapted from a speech given by the author at the Annual Conference of the American Association of Workers for the Blind held in Chicago, July 1969.

Preprocessing of images

Summary

The Aging Blind and Leisure Time Activities

Seventy-five percent of the persons requesting service of the Metropolitan Society for the Blind (MSB) are over 55 years of age. Although they form the largest group of persons served, we have been concerned that proportionately they have received the least amount of attention. Constructive use of leisure time has, for many been non-existent. Social isolation can cause loneliness and unhappiness, and with handicapped people isolation and rejection can be more crippling than the handicap itself. We, therefore, felt that it was imperative that we work with other community agencies to find ways of making meaningful opportunities for social and recreational experiences available to the elderly blind. There is a special obligation, however, to make certain that planning is done with full awareness of the unique needs of blind persons. In this article, the importance of cooperative efforts of public and voluntary agencies and the utilization of community resources is illustrated.

□ The social service director of MSB is a member of a planning council composed of representatives of 14 Detroit social agencies (voluntary and governmental) working together for improved recreational services to the aging. This council was formed at the request of the Detroit Department of Parks and Recreation Commission. The original statement of purpose recognized that "the elderly continues to have definite needs for social recreation opportunities" and that "urban living creates a desire and need for recreation in camp setting for all ages, old as well as young, which challenges us to seek ways and means to offer this kind of recreational facility, at a reasonable fee, to all Senior Citizens in the Detroit Community."

Starting in 1967, the first blind seniors (clients of MSB) were included in the camping sessions. The camp, which is about 40 miles from Detroit, has facilities for 170 campers at each four-day session. There are three sessions during the month of August. The camp provides the seniors, sighted and blind, with an opportunity for a real vacation. Activities include fishing, boating, swimming, hiking, arts and crafts, singing, dancing, card playing, and others. The cost is seven dollars per session and camperships are available for those whose low income prohibits this expenditure.

In screening clients for this project, three important factors were taken into consideration, physical condition, degree of visual impairment as related to daily functioning (mobility), and personality attributes. From approximately 30 candidates, ten persons who seemed to be motivated and in fairly good physical condition were selected. A home call was made to describe the camp setting, activities, and arrangements, and to observe the client in his home. Nearly all were enthusiastic, but, at the same time, apprehensive about leaving

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Community-wide Planning

Camping

Selection criteria and orientation

home. It was the social worker's feeling that without this talking through of their anxieties and fears, most candidates would probably not have had the courage to go to camp unaccompanied by a relative or close friend. The worker also assisted in filling out necessary registration forms, details of which can be frustrating for a visually handicapped person.

With the exception of one individual, camping was the first large group socialization experience for these elderly handicapped people. It was our impression that many sighted campers as well as staff personnel came to the realization that blindness need not be as incapacitating as they had believed. Conversely, our clients learned the meaning of group acceptance and gained confidence in their ability to participate with their sighted peers. Since 1967, the number of elderly blind campers has increased each year and several individuals have asked to attend more than one session.

The camp supervisor, who assists the senior citizens' coordinator for the Detroit Department of Parks and Recreation, utilizes many senior citizens as volunteers in city-wide activities. Every year, during the Christmas holidays, a Christmas "Fantasy" for youngsters is staged in a large municipal auditorium. The elderly assist in directing children to the various booths, passing out candy canes, etc. One of the favorite attractions is the direct telephone line to the North Pole where children can dial a number and place their Christmas requests with Santa's helpers. This is an ideal opportunity for blind senior citizens to take an active part in the festivities. Comments such as, "Christmas means more to me this year" . . . "Being here has added ten years to my life" . . . "It beats looking at four walls all day," encouraged us to increase the number of volunteers for this program each year.

□ In seeking a solution for the many elderly blind who were not able to travel independently, the senior citizens program director of the Detroit Department of Parks and Recreation, the director of the United Auto Workers' Retired Workers Center, and the MSB developed a program to provide these persons with an opportunity to become involved in a variety of activities available in existing senior citizens centers. Project Restore was designed to demonstrate this. Financed by the Michigan Commission on Aging under Title III of the Older Americans Act, the project is administered by the City of Detroit, Department of Parks and Recreation with the cooperation of the UAW Retired Workers Centers and the Metropolitan Society for the Blind.

Project Restore was funded in the fall of 1967, but did not get under way until July 1968, because of personnel difficulties. As the new project director had to reactivate contacts with center staffs and potential clients, activities did not start until September 3, 1968. Two centers in Detroit, one on the east side and one on the west were designated. Transportation to and from the centers is arranged for the blind seniors who are selected from the caseload of the Metropolitan Society for the Blind.

In this project the Metropolitan Society for the Blind provides: in-service training for center staff personnel to develop understanding and acceptance for the blind; sufficient information, including record material, as a means of helping other staff work effectively with the client; assistance to the client on

Seniors as Volunteers at Christmas

Project Restore

The role of MSB

his initial visit to the center and participation in orientation to the program; continuing casework service to the client and his family as indicated; and consultation with the project director in order to enable the client to derive maximum benefit.

The UAW Retired Workers Centers provide professional staff and administration for the east side center. This center does not limit its facilities to auto workers alone but gives service to any senior citizen who desires to join and benefit from the services offered.

The Detroit Department of Parks and Recreation conducts municipal recreation programs involving physical, passive, and cultural activities at department-owned centers. This agency, to which the grant was made, has the ultimate responsibility for the administration of the project. The agency employs the project director who is assigned to implement the program with the close consultation of the coordinator.

The project director assumed the responsibility of evaluating clients referred by MSB. The referral criteria included the inability to travel independently, social isolation, and overdependence on family group.

The program began with about four or five persons attending each center. Gradually the number increased to 12 or more blind elderly persons attending the east-side center one day a week, and another 10 to 12 persons on a different day at the west-side center. The activities, usually sedentary (such as sewing cancer pads), have been extended to field trips, crafts, games, discussion groups, and community singing. At present there are one or more activities taking place four days a week. Forty-six individuals have been involved in the program since its inception.

□ As the program developed, the staff of the center became aware of several factors hitherto not considered. The two centers chosen for the demonstration project were found to serve essentially white, middle-class clientele. These people did not necessarily live in the immediate area of the center, as transportation for them was no problem. The majority of the referrals from MSB were black inner-city residents. We could not include those persons living on the outskirts of the city, because of high transportation costs. Also the persons selected for the project were the most isolated and socially deprived. As a result, we found that we were not only attempting to integrate the aging blind into sighted center activities but also that we were involved with more emotionally-charged racial and socio-economic factors.

During the summer and fall of 1967, Project Restore had been introduced to the various sighted committees and service group members (by the staff of the designated centers) as an agency-accepted plan to be tested. At that time, the role of the center director was to seek acceptance by the leadership personnel of an idea that had not originated with the center members. For good reasons, Project Restore was postponed for many months, forcing the staff to try to sustain interest in a project that had initially been highly acceptable. When Project Restore was re-activated in mid-summer of 1968, reactions such as, "that again" . . . "that other lady tried it and nothing happened" . . . "why do you think it will really get started," were expressed. Quite hastily, groups

*Department of Parks employs
project director*

A dozen go to each center

Black, Inner-City Residents Referred

Some members resented visitors

of center members were called together to discuss their cooperation and their active involvement in helping the blind members who would be participating. At no time, however, was there discussion with the center members that the majority of the people in Project Restore would be black. As the project took hold, it became obvious that some of the sighted center members reacted with resentment, anxiety (that "their" center was being taken over by "those people"), and fear of being with blind people. This intensified their own anxieties regarding the possibility that they too might lose their vision. The large number of blind people (12) overwhelmed them and was probably an over-ambitious number to attempt to involve initially. Many of the blind persons had minimal skills as functioning blind persons with additional physical limitations, which was an added difficulty in this situation.

The west-side center director observed that the center members' "most successful activity with the blind persons . . . has been in folk singing. Here they were able to join in the activity immediately and learn quickly from the group, with no pressure on any individual—sighted or blind." Two of the blind participants transcribed the folk song sheets into braille, and began singing from their braille copies, a development in which the sighted center members were very interested.

Folk-singing very popular

The discussion group has been successful. It was organized using a nucleus of blind persons with an invitation to sighted members to join. Several sessions of music appreciation went very well, again using the blind group as a nucleus. Slide programs presented by center members who had traveled to Japan, Europe, and Australia have been attended by both sighted and blind, with the narrators describing their pictures in greater detail for the benefit of the blind members.

The interaction between center members who consider the center as their "private club" and the blind participants, seems to be primarily task-oriented. The sighted center members will help, for example, with sewing, threading a needle, or getting coffee for the blind. On an individual basis, several of the center members have also made friends with blind members, telephoning them at home, eating together at the center, etc.

Sighted and blind interact

It became obvious that the large number of blind seniors convening at one time at the centers tended to encourage separatism. Integration was compounded by the variables already mentioned, plus the fact that the center groups and staffs had not been sufficiently involved in the planning and decisions regarding the project.

□ Based on observations of the project director, relationships are being formed between the blind participants which are extremely supportive. The blind participants, ranging in age from 55 to 82 years, were most enthusiastic. A large percentage are black and female, although more males have been participating recently. Comments such as, "The project is now a part of my life" . . . "I feel like a human being, I don't stay in that old apartment and become bitter and depressed" . . . "I like to learn to use my hands, they are now my eyes," are not uncommon. Learning new skills, being with people, an opportunity to leave the confining environment of their homes—were common themes. They were not aware of rejection by some of the membership.

Blind Participants Pleased With Project

We also recognized: 1) the need for rehabilitation training and mobility before or concurrently with participation in the program, 2) the need to analyze the education, background, and interests of each blind person to determine the appropriate activity for each individual, 3) the degree of individual attention required for participation in a skilled activity such as crafts, 4) the degree of attention required to function in the center generally, and 5) the multiple handicaps of the project group including arthritis, heart conditions, hearing loss, which greatly influence functioning.

In an attempt to cope with the dependence of the blind seniors, rehabilitation teaching was introduced in January 1969, at the westside center. Attitudes toward blindness, sensory loss, and other physical handicaps of the clientele greatly complicated the learning of simple skills, and a great deal of practice was required by the participants. Movement of furniture to accommodate changes in center activities is frustrating to blind people. Also finding their way from one part of the room to another with large numbers of people in the room is anxiety-producing. The rehabilitation teacher who is blind emphasized to the clients that they are living in a "sighted world" and, therefore, must learn the requisite skills to adjust to the environment. This, however, is easier said than done, for some of the elderly cannot easily adapt to change. It was the rehabilitation teacher's recommendation that a sighted mobility instructor could be more effective in a group setting.

We therefore decided to assign our mobility instructor to the east-side center. The program consisted of: 1) meeting with sighted seniors to discuss feelings about blindness, to better understand blindness, and to understand the various techniques blind people use to compensate for the loss of sight, and 2) the discussion and demonstration of mobility skills for the group of blind seniors during their afternoon program with the opportunity to practice mobility individually. In the evaluation by the mobility instructor it was stated, "Given the conditions that existed concerning the large number of poor, black, socially inactive, blind people placed in the midst of a small, middleclass, white group of sighted center members who had previously established a tight *esprit de corps*, the approach used of involving each group in separate meetings seemed to have been effective." The usual fear of blindness and hesitancy to approach blind people was apparent in the sighted group. The meetings enabled the group to express their feelings and allay some of their anxieties, thus removing one barrier to interaction.

□ Some of the factors to be taken into consideration as we planned our second year, in September 1969, were: 1) the learning of special skills in a separate group makes it possible to move a blind person into an on-going group; 2) mobility training is an important element in independence in any center; 3) the supervision of and responsibility for the blind project members who participate in field trips must be carried out by volunteers rather than center members; 4) further expansion of the programs can be put into effect by referring a small number of elderly blind persons to senior center programs near or in their own neighborhoods. This would, hopefully, bring together similar socio-economic backgrounds.

Much was learned from first year of project

Rehabilitation teaching tried

Mobility instruction more successful

Second-Year Planning

Usher's Syndrome—Deafness and Progressive Blindness: An Abstract

The following short article is an abstract of Dr. Vernon's "Usher's Syndrome—Deafness and Progressive Blindness" which originally appeared in The Journal of Chronic Diseases in 1969. Reprints of the complete article are available from Dr. McKay Vernon, Western Maryland College, Westminster, Maryland 21157.

The usual description of Usher's syndrome as a congenital deafness and retinitis pigmentosa is incomplete. There is also central nervous system degeneration manifesting variably in psychiatric illness, loss of olfactory sensitivity, aphasia, mental retardation, abnormal EEG readings and other neuropathology and behavioral correlates. While it is a rare disease in the general population (3 cases per 100,000 population), it is significantly prevalent among those who are deaf. For example, approximately five to ten percent of the genetically deaf are afflicted with this handicap.

The disease is generally reported as being inherited autosomal recessively. Recent research indicates that heterozygote carriers of Usher's may be identifiable by complete auditory, visual, and vestibular diagnostic procedures.

Usher's is more common in family pedigrees having cases of retinitis pigmentosa without deafness, which, along with the variances of traits found in persons with Usher's, raises serious questions about its genetics and the possible embryological, toxic, and metabolic processes in its pathogenesis.

□ Commonly used techniques for diagnosing the disease (ophthalmoscopic examination and visual field testing) fail to detect the condition until it is in a relatively advanced stage and the patient is usually in his late teens. More thorough techniques involving electroretinography, electrooculography, and dark adaptation measures make possible much earlier diagnosis.

Although a wide variety of treatments have been tried, including surgery, endocrine therapy, vitamins, and transplants, at present the disease cannot be cured nor can its course be significantly altered. This places a premium on prevention.

A program for prevention through high risk diagnostic screening coupled with genetic counseling is both feasible and practical. The already existent centralization of the high risk populations assures a yield from screening procedures of probably five to ten percent. Thus prevention is strongly urged in view of the trauma and chronicity of the affliction. Following identification of cases of Usher's syndrome, relatives should be examined to determine if they are carriers.

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Diagnosing Usher's Syndrome

Treatments are ineffective

Research into biochemical, genetic, metabolic, psychiatric, and other behavioral aspects of Usher's offers hope not only for greater understanding of this disease, but also for findings of far greater generality. Usher's represents a centering of gross central nervous system pathology with major psychological correlates such as aphasia, memory pathology, psychosis, and mental retardation. An understanding of the pathogenesis of Usher's may give insight into causes of forms of these other conditions.

□ The data on the sample studied in the original research of this paper substantiates the existence of extensive neuropsychological symptomatology concurrent with the loss of hearing and sight. The findings also raise the questions of whether or not the deafness is congenital suggesting that it and the vestibular pathology may be progressive, but well advanced by age two or three years. Considerable variation in hearing, vision, and other abnormalities present in the sample further indicate that defining Usher's syndrome in terms of hearing and visual losses is a misleading oversimplification.

Research continuing in all aspects

Nature of Usher's Is Complex

IARF Formed by Merger of NASWHP and ARC

On November 2, 1969, at their joint annual conference in New York, the National Association of Sheltered Workshops and Homebound Programs (NASWHP) and the Association of Rehabilitation Centers (ARC) merged to form the International Association of Rehabilitation Facilities (IARF). The new organization represents over 650 rehabilitation facilities providing services to handicapped persons throughout the United States and Canada.

The primary purpose of the new Association will be to assist in the development, expansion, and improvement of rehabilitation facilities and services through a multi-faceted program of education, research, communication, and governmental relationships.

The officers of the Association are Milton Cohen, New York, president; Nathan B. Nolan, Atlanta, president-elect; Francis W. Mulcahy, Washington, D.C., secretary; and Albert P. Calli, New Haven, Conn., treasurer. Offices of the Association are located at 7979 Old Georgetown Road, Washington, D.C. 20014 and 1522 K Street, Washington, D.C. 20005.

Prevention of Vocational Disabilities Through Comprehensive Planning

Among the many roles of the vocational consultant is the prevention of vocational disabilities for the blind. The vocational consultant should be one of the chief advocates of the development of positive action programs. This preventive approach, in fact, is one of the most significant single contributions he can make to the overall rehabilitation of the blind. It is multidisciplinary in substance and involves the entire community served by the agency. It is essentially attitudinal on the part of the general public, the employer, the professional worker, and certainly the blind themselves.

While the vocational aspirations of specific individuals may vary there is little significant difference between blind people as a group and the sighted population. The basic desire to achieve independence and to contribute some of oneself to society is universal. Since individual motivation is influenced and conditioned by environmental forces, a well-organized, systematic attack on these forces must result in marked change in motivation. Furthermore, if the program of attack is based on constructive philosophical concepts, more successful results will be achieved.

□ The vocational consultant must be constantly alert to the negative factors which constitute impediments to the vocational success of the blind. He must then formulate a program which is firm enough to instill confidence in the community and yet flexible enough to readily adapt to changing situations. The basic needs of blind persons for food, clothing, shelter, self-expression, independent action, personal recognition, and socio-economic growth do not vary from one community to another. The degree to which blind persons achieve them is most often governed by the availability and the wise use of community resources.

A study of the majority of today's urban communities would seem to reveal that, while in many instances development of more modern facilities would be helpful, better organization and utilization of existing resources can substantially improve the circumstances of the blind. Unfortunately, however, the all too frequent existence of long-standing professional jealousies among workers for the blind and the perpetuation of negative stereotyped images by some of the blind themselves for temporary personal gain, militate against short-term crash improvement programs. The solution is manifold and requires many step-by-step, well-planned efforts directed at each facet of the problem, much like the various colors in a paint-by-number picture which, when finally coordinated in proper sequence and relationship, stand together to constitute a meaningful result. If, as in the composition of a painting, each element of vocational preparation is introduced at the right time and in the proper perspective, the prevention of vocational

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The Role of the Vocational Consultant

Better use of existing resources needed

handicaps can be achieved. If the objective is to be a successful vocational accomplishment, it must be recognized that vocational planning begins for the agency long before intake and for the client at the time of the onset of blindness.

The vocational consultant must work in close cooperation with other disciplines to help create vehicles through which the general public can gain more positive understanding of both the problems and the potential of blind persons. He must prepare the community of employers to accept the qualified blind worker as a normal, productive member of his organization. He must develop programs wherein the worker for the blind can learn of possible solutions in specific problem areas. He must assist in the development of methods by which the families and peer associates of the blind can learn to act and react in a positive manner. Last, but certainly not least, he must create programs which can help the blind individual develop his own vocational potential to its maximum levels with a minimum of purposeless frustration, time loss, aimless groping, and experiences of failure. The prevention of a vocational handicap, then, requires program development ancillary to and preceding actual vocational counseling. It is manifest in the creation of many specific, yet complementary, elements. These, when viewed as a whole, allow the blind client to embark on well-focused vocational pursuits before he acquires too many unalterable negative personality characteristics.

It is toward the achievement of this goal of providing a comprehensive knowledge and a realistic understanding of successful occupational accomplishment that some of the basic concepts and representative plans of action are herein presented. It is anticipated that the following short and long-term programs can contribute much to the integration of the blind worker into the so-called normal workaday world. It is also expected that these programs will open new vistas for the successful rehabilitation of visually handicapped men and women.

□ Conditions which are common to most urban communities require the application of the following principles:

1. Improvement of professional relationships between and among the staffs of key agencies concerned with the rehabilitation of the blind.
2. Coordination of inter-agency plans and programs.
3. Development of unanimity of purpose as a common denominator of individual disciplines represented by varied community organizations.
4. Making adequate and appropriate occupational information readily accessible to all persons concerned.
5. Insuring maximum exposure of all blind persons to personal, social, and vocational means as early in their developmental stages as may be possible.
6. Creating for all blind students, while enrolled in school, access to the full gamut of academic, commercial, vocational, physical education, and arts courses available to their peers.

Inter-disciplinary approach is necessary

Basic Principles Can Be Applied in Most Communities

7. Providing adequate vocational guidance and counseling by qualified personnel knowledgeable in problems peculiar to the blind.
8. Development of adequate facilities to insure proper medical treatment, pre-vocational diagnosis, personal adjustment, vocational evaluation, training, placement, and follow-up services.
9. Diversification of occupational selection and extension of vocational potential.
10. Formulation of a nucleus for a positive action, problem-solving group constituting a dynamic resource for the community, blind persons, their families, and peers.
11. Improvement of case-staffing techniques and the procedure for inter-agency referral.

☐ To characterize the situation existing in most communities one must recognize that:

1. The high school student has been too frequently exposed only to academic learning and excluded from vocational and physical activities.
2. The college student has been, for the most part, left to his own devices for career selection and subsequent job-finding.
3. Many of the more difficult to evaluate and seemingly poorly motivated blind have gone virtually unassisted.
4. Many of the adventitiously blind have had the benefits of some vocational diagnosis and personal adjustment programming but then, for the most part, they have been directed into traditional types of employment.
5. The public, including many professionals in the field of education, business, and industry, are still of the opinion that opportunities for the blind must be limited to certain restricted fields of work.

Characteristic Situations

Much of the reason for the disorganized approach to the problem lies in the urgency of meeting immediate demands for service. Until now most agencies have been unable, because of caseload and legislative demands, to develop programs which would concentrate on meeting future needs. Public agencies concerned with meeting the immediate needs of the blind, therefore, should be encouraged to continue to do so. The approach of the vocational consultant in a private agency should be to emphasize the creation and development of new programs which will eventually minimize the day-to-day demand for problem solving. The aforementioned problems require a variety of answers, the solutions to which often spill over into other areas. Because these problems are so inter-related, specific lines of demarcation cannot be drawn.

Both immediate and future demands need to be met

A major factor influencing the solution of most of these problems is the existence of strained relationships among the professional personnel of the agencies. Antagonisms and jealousies are deep, but they must be minimized. It will be a long time before complete harmony can be achieved. A series of well-planned inter-agency meetings can help to soften these conflicts. Inter-agency cooperation and understanding defies scheduling and, therefore, one must be prepared to seize appropriate opportunities to foster improvement.

Professional cooperation and understanding must be promoted

The prevention of vocational disabilities falls into five areas: personal adjustment, education, vocational diagnosis, training, and employment. The following mechanisms, already in operation, are presented as examples of programs which have been established by or with the Metropolitan Society for the Blind of Detroit, as new approaches to the prevention of vocational disabilities.

A program of industrial arts and vocational education, conducted by a special education counselor for blind high school students, includes:

Public school consultation

1. In-school projects designed to expose the blind student to a wide variety of work experience.
2. Special means to acquaint public school administrators and teachers with the need for extending vocational opportunities to the blind prior to their graduation from high school.
3. New avenues for consultation with school counselors relative to the variety of occupational opportunities available to blind persons.
4. Suggestions for industrial arts teachers regarding methods by which blind students can be more constructively included in their programs.

☐ A program concerned with the availability and utilization of occupational information was started in January 1967. It began as an occupational library for acquiring basic resource materials and all available data concerning occupational information. By the middle of February the files had been set up and the materials catalogued and separated into three categories:

Occupational Information Center

1. Occupations which are known to be available to totally blind persons with minimum entry problems relating to blindness.
2. Occupations which are, for the most part, generally considered to be available to persons with some usable vision.
3. Occupations which have caused some considerable difficulty for blind applicants.

Formal announcement of the existence of the Occupational Information Center was made in April 1967. In May 1967, groundwork was laid for transcribing the data into four different forms: a braille card file index; selective pamphlets on 15- to 20-minute tapes; and vocational information in specific areas for detailed analysis in print and extended tapes. In the Fall of 1967, preliminary catalogues of available occupational resources were circulated. It is planned that this program will be developed on a sustaining basis and possibly lead to a research grant project. It might include staff to uncover new and different vocational training and employment opportunities.

☐ The first "Careers Unlimited" conference was held in April 1967. It was designed to acquaint both blind and sighted persons with a wide spectrum of career opportunities available in the Detroit metropolitan area. The importance of teacher-parent and professional involvement was stressed. A second conference was presented one year later. Follow-up studies would seem

"Careers Unlimited" Conference

to indicate that conferences of this type should be scheduled in the spring of alternate years.

A biennial three-day workshop for college upperclassmen and graduates is held. The emphasis is upon procedures and methods for job finding, retention, and professional advancement. It includes such topics as the psychology of work, where and when to look for employment, professional etiquette and grooming, how to write resumés, and how to conduct interviews. It is important to note that these sessions are conducted on the basis of free informational exchange among professional specialists who act as group leaders in the various study sessions with the college students.

A 13-week program has been developed by the Metropolitan Society for the Blind in cooperation with the home economics department of a local high school. It provides home economics teachers with an opportunity to observe and practice special techniques for teaching the art of homemaking to visually handicapped students enrolled in the public schools.

Blind students, like their normally sighted peers, must be prepared to assume roles in society commensurate with their individual needs. The potential needs of the visually handicapped do not differ essentially from those of the nonhandicapped. This applies no less importantly to the specific art of homemaking. Therefore, with common needs and goals, comparable exposure to homemaking techniques utilizing special methodology provides the desired results.

□ A vocational diagnostic and guidance program was initiated in March 1968. This program is concerned with the development of new and strengthened vocational diagnostic and guidance services. A more adequate psychological testing program should result in the client's being referred to the Vocational Information Center for help with specific plans for the future.

If this testing program does not meet the need, a separate diagnostic center should be developed. Clinic sessions might be started on a part-time basis, working in close cooperation with the Vocational Information Center. Referrals should come from the following sources: public schools, adults seeking services, and entering college students referred for testing and guidance. Testing programs for young blind children of preschool and early school ages must also be further developed.

A vocational consultant for the blind, working within the public school system, will facilitate a team approach to the rehabilitation of blind students. The team might be comprised of the state vocational rehabilitation counselor, the private agency, the vocational education counselor, and the Vocational Information Center staff. This does not imply that the latter two should be exclusively devoted to student evaluation and guidance, but this should be an important part of their responsibility. They would also be involved in the development of specific services for the adult blind.

An eight-week summer program was developed by the Department for the Blind of the Metropolitan Detroit Rehabilitation Institute. Blind students planning to enter college are provided with an opportunity to sharpen their

Work readiness seminars for professionals

Public school, home economics teacher training program

Vocational Evaluation

Public school vocational counselor

Pre-college training program for high school students

skills in such basic areas as communications, note-taking, recording, travel, grooming, use of research facilities, and related aspects of independent living which will help them achieve a more rewarding college experience. For many students this is their first exposure to a college environment programmed toward the development of greater self-reliance and maximum use of available study resources.

Seminars on occupational information consisting of monthly round-table discussions for blind and partially seeing adults, students, parents, and other interested persons relative to vocational training and employment aspects of blindness are held. A significant aspect of this series is that the seminars are conducted in the location of the occupation under discussion, for example, radio disc jockey: a radio station; medical transcriptionist: a hospital.

Tours to various businesses and industries might be conducted. It is hoped that two major results will be achieved: provide blind persons with information regarding competitive employment situations; acquaint the employer with the possibility of employing blind persons.

A summer work scholarship program for blind students supported by grant funds which would be specifically aimed at students interested in work experience might be begun. Throughout the nation this type of program is being increasingly utilized by business, industry, and certain professions. The objective is to encourage capable students to enter various fields.

Research studies are in progress at various universities concerned with the employment and employers of the blind. This study will be conducted in consultation with appropriate members of the staff of local agencies.

Another function of the vocational consultant is to extend and improve training programs for adults. This, however, is somewhat contingent upon better knowledge of the types and numbers of clients needing training. For example, one such program, initiated in April 1968, was for training medical transcriptionists and related occupations. The program is organized in three distinct phases: 1) Orientation and training in basic typing, spelling, and business English in a rehabilitation center setting; 2) Intensified work-up and skill training at an accredited business school; and 3) An on-the-job training program in the offices of the rehabilitation center.

University studies of employers of blind people will contribute much toward the development of this type of programming. In this way we can learn more about blind persons who are currently employed; more importantly, we can obtain a comprehensive picture of individual employer reactions to their blind employees. These studies will result in bringing to our attention many employers of blind workers and their success in various occupations. It should also provide a more realistic appraisal of the potential for blind persons in given fields of endeavor.

□ While the vocational consultant is concerned with programming both present and future, it is perhaps his role in disability prevention that is most significant. Blindness has always been and will continue to be a handicapping condition, but it does not necessarily follow that it must be disabling. Positive

Monthly occupational information seminars

Vocational understanding tours

Work scholarship program

Special research studies

Special vocational training

Vocational Disability Prevention

programming directed toward overcoming the negative factors as soon as visual problems become evident will substantially reduce its negative effects. To try to develop more acceptable social, emotional, and vocational interaction techniques with the so-called normal world at the time the blind person is supposedly ready to meet the challenges of work is both unsound and wasteful. Constructive inter-personal relationships with the family and sighted community should begin at onset of blindness. Good grooming, posture, mobility, and communication techniques should receive special attention throughout the formative years. These are certainly prerequisites to ultimate successful vocational adjustment. The sighted person gains most of his vocational knowledge through visual observations. This avenue, of course, is closed to the blind. Therefore, special programming designed to acquaint the blind person with the various facets of a variety of occupations is necessary.

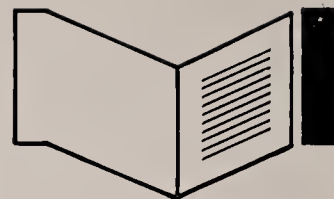
□ Rather than being prevented from becoming involved in so-called normal work activities, blind persons should be encouraged to explore, evaluate, and expose themselves to a much broader variety of work experiences. In this way, the blind person will be much better equipped to select a vocational goal more easily as well as more realistically. Early concentration on the development of personal skills and occupational knowledge should be initiated and supported by the vocational consultant. The responsibility then is to work toward altering the emphasis in work for the blind from one of inability to perform competitively to one of almost limitless potential. Only such positive concepts can help to turn the tide for the blind worker and result in the prevention of vocational disabilities.

Summary

Three Agencies Accredited Recently by NAC

The National Accreditation Council for Agencies Serving the Blind and Visually Handicapped has announced the recent accreditation of three agencies: Arkansas Enterprises for the Blind, Little Rock; Cincinnati Association for the Blind, Ohio; and Houston-Harris Lighthouse for the Blind, Texas. Eight other agencies and schools have been granted accreditation under this program since its inception in 1967.

In announcing the accreditations, Ewald B. Nyquist, chairman of the Council's Commission on Accreditation, noted that the number of agencies seeking accreditation is increasing steadily: 69 schools and agencies are in various stages of preparation, with 18 expected to complete the self-study phase by June 30, 1970.



Forgotten Children; a Program for the Multihandicapped, by Merle E. Frampton, Ellen Kerney, and Regina Schattner. Porter Sargent Publisher (11 Beacon Street, Boston, Massachusetts 02108), 1969, 287 p. \$6.95. Report on the first six years (1956-1962) of a special project aimed at developing an effective educational program for multiply handicapped blind children. The experimental program began in September 1956 at the New York Institute for the Education of the Blind and enrolled children who were both cerebral-palsied and blind or partially sighted. Many of the children had additional disabilities such as emotional disturbance, epilepsy, hearing loss, speech defect or mental retardation. Some case histories are given.

Sound into Sight. *The Chronicle New Zealand Foundation for the Blind*, Private Bag, Newmarket, Auckland, New Zealand), Vol. 1, No. 51, September 1969, pp. 41-43, illus. An article in question and answer form about Professor Leslie Kay's mobility devices, the ultra sonic torch and the ultra sonic spectacles.

Development of Scales for the Measurement of Orientation and Mobility of Young Blind Children, by F. E. Lord. *Exceptional Children* (The Council for Exceptional Children, 1201 16th Street, N. W., Washington, D. C. 20036), Vol. 36, No. 2, October 1969, pp. 77-81. The author is professor of education and director, Special Education Center at California State College in Los Angeles. He describes the construction of the measurement scales and discusses the results obtained in the experimental testing of 173 blind children ranging in age from three to 12.

Learning by Blind Students Through Active and Passive Listening, by Carson Y. Nolan and June E. Morris. *Exceptional Children* (see address above), Vol. 36, No. 3, November 1969, pp. 173-181. The three listening modes used in this research were (a) continuous listening, (b) listening interrupted at four intervals for 45-second periods of mental review, and (c) listening interrupted at four intervals for 4 minute periods for the making of written notes. Two similar studies (each covering literature, science, and social studies) were con-

ducted, one with grades 4 through 7 and the other with grades 8 through 12.

The Deaf Blind: Their Education and Their Needs, by Lars Guldager. *Exceptional Children* (see address above), Vol. 36, No. 3, November 1969, pp. 203-206. The author is the assistant principal of the Department for Deaf Blind Children at the Perkins School for the Blind in Watertown, Massachusetts.

Review of Research on the Intelligibility and Comprehension of Accelerated Speech, by Emerson Foulke and Thomas G. Sticht. *Psychological Bulletin* (American Psychological Association, 1200 17th Street, N. W., Washington, D. C. 20036), Vol. 72, No. 1, July 1969, pp. 50-62. Reviews the various methods of producing compressed speech and discusses evaluation of effectiveness. Requests for reprints should be sent to Dr. Emerson Foulke, Department of Psychology, University of Louisville, Louisville, Kentucky 40208.

Answers to Accreditation Questions

National Accreditation Council for Agencies Serving the Blind and Visually Handicapped

Q. If our agency is already doing a good job, why should we seek accreditation?

A. You should be among the first to seek accreditation for three main reasons:

1. Accreditation will give official and public recognition to the good job your agency or school is doing. This visible seal of approval will become increasingly important in the recruitment of qualified staff and to help potential clients and supporters identify the agencies that are meeting generally accepted standards of service and administration.

2. By seeking accreditation you demonstrate your broad concern for all people who are blind or visually handicapped. The accreditation of your agency will help to create the kind of climate in which other agencies—that may need to make changes in order to qualify—will be moved to start improving their services. Thus your leadership will influence the entire field, to the benefit of all blind Americans and our nation as a whole.

3. Outstanding agencies have already found that their self-studies are well

worth while for their own sake. They have learned that the self-study revitalizes staff and board, opens up fresh possibilities, leads to action that makes a good agency even better. And that's what you want, isn't it?

Q. After the on-site visit, how soon will we know whether our agency has been accredited?

A. The chairman of the on-site review team should complete the team's report within two weeks after the visit. In prep-

aration for submitting the team's report to the Commission on Accreditation, NAC sends a copy of the report to the agency executive to review for statements of fact. When the report has been returned to NAC (in about 15 days) it will be brought before the Commission on Accreditation at its next meeting. The Commission meets at least twice a year. Thus, depending on when your review is held and allowing time for reporting and reviews, you should receive the Commission's official decision from two to six months after the on-site review.

Q. When do we pay the application fee which is required of all agencies seeking accreditation?

A. Any time you wish to go on record as

beginning the accreditation process. In any case, the fee (\$150) is due and payable not later than the time when the report of your agency self-study is sent to NAC. This is because the fee covers a part—although not all—of NAC's cost of reviewing the self-study for completeness, of recruiting the necessary number of qualified members for the on-site review team, and making preliminary arrangements for the visit.

Q. What elements are considered by the Commission on Accreditation in making its decision?

A. First, the conclusions reached by your agency in its self-study report.

Second, the report of the on-site review team.

Third, any materials that you wish to submit that reflect changes since the self-study report.

These elements are used by the Commission in making its judgment as to the likelihood that recommended improvements or changes can and will be made within a reasonable time.

Remember, in the accreditation process, not perfection but perfectability is sought!

What is your question about accreditation? Send it to Accreditation Questions, c/o National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, 84 Fifth Avenue, New York, N.Y. 10011. If it is of general interest we will try to answer it in this column, but, in any case, you will receive an answer.

News in Brief

■ The National Center for Deaf-Blind Youths and Adults has been established by the Industrial Home for the Blind, Brooklyn, New York, under a contract being developed with the Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare.

Director of the National Center is Dr. Peter J. Salmon, administrative vice-president of IHB. Also, Louis J. Bettica is director of services, Robert J. Smithdas is director of community education.

The IHB was selected because of its success in developing a regional center for the deaf-blind, the Anne Sullivan Macy Service. This center has been discontinued and its staff has been transferred to the National Center.

Services offered by the National Center include casefinding, evaluation, communications training, training in independent travel, low-vision rehabilitation, and long-term rehabilitation services including employment as indicated.

■ The Brooklyn Bureau of Community Service has opened a new training center, a model apartment, to prepare blind, and physically, emotionally, and mentally handicapped men and women for independent living. Located at 285 Schermerhorn Street, Brooklyn, New York, the center will be used for teaching cooking, housekeeping, household budgeting, and related subjects.

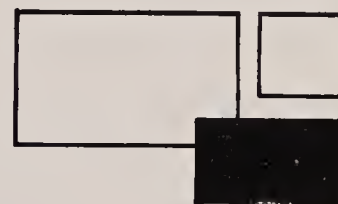
■ A. Edward Maumenee, M.D., professor and director of the department of ophthalmology the The Johns Hopkins University School of Medicine, has been elected president-elect of the American Academy of Ophthalmology and Otolaryngology. Dr. Maumenee assumed his post on January 1. He will become president of the Academy on January 1, 1971.

■ *Involve Youth*, a new pamphlet from the Youth Committee of the President's Committee on Employment of the Handicapped, is directed to high school and col-

lege-age youth in an effort to get them involved with physically and mentally-handicapped young Americans. Copies are available free on request from the Youth Committee, President's Committee on Employment of the Handicapped, Washington, D.C. 20210.

■ *AAWB Contemporary Papers, Vol. 1*, containing four articles (free), and *A Report and a Reprint*, containing two articles by Mary K. Bauman (one dollar per copy), are available from the American Association of Workers for the Blind, Inc., 1511 K Street, N.W., Washington, D.C. 20005.

■ *Facts About the National Transplant Information Center and the National Council on Tissue Utilization and Transplantation*, a pamphlet, is available from the United Health Foundations, Inc., 150 Fifth Avenue, New York, N.Y. 10011.



■ Twelve 16mm, sound, color films and two 35mm, color filmstrips on various aspects of rehabilitation are now available on free loan from the Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare. A descriptive brochure and the materials themselves are available from the Office of Public Affairs of SRS, 330 Independence Avenue, S.W., Washington, D.C. 20201.

■ Seven health and mental health training methodology bibliographies have been developed through a joint effort of the National Communicable Disease Center and the National Institute of Mental Health, U.S. Public Health Service. Four of the bibliographies are concerned with training methodology and three with in-service training. Each publication is fully indexed and annotated. Detailed information and prices are available from the National Communicable Disease Center, Atlanta, Georgia 30333.

■ Recording for the Blind, Inc., New York City, has announced that, beginning in 1970, all of its tapes will be recorded at 1 7/8 ips. Newly recorded books will be on two-track tapes, while books already recorded will be supplied on four-track tapes.

RFB has also recommended the use of the Sony 105 tape recorder for study purposes. This model features a page-beep indexing system and variable speed control unit. Information on the Sony 105 is available from the American Printing House for the Blind, P.O. Box 6085, Louisville, Kentucky 40206.

■ The Arizona Association of Workers for the Blind, chartered as a state chapter of the American Association of Workers for the Blind last July, elected officers at its first meeting in October. Frank Kalb, director of the Phoenix Center for the Blind, Inc., was elected president; James Carlock, president of the Arizona Federation of the Blind, first vice-president; Manuel Cajero, research and development coordinator of the Arizona State Division of Rehabilitation for the Visually Impaired (DRVI), second vice-president; Mrs. Margaret L. Bluhm, executive director of the

Foundation for Blind Children, secretary; and George Mayo, rehabilitation specialist, DRVI, treasurer. In addition, Harlene Stone, Richard Cullin (Hadley School for the Blind), and Maurice Mayfield (business enterprise coordinator, DRVI) were elected to the board.

■ James G. Hill, formerly assistant executive officer of the National Library of Medicine, has been appointed executive officer of the newly established National Eye Institute, one of the National Institutes of Health. In his new position, Mr. Hill will supervise management services, direct and coordinate administrative policies and programs, and advise the director on the managerial aspects of research programs.

■ Reprints of a report on the Pre-School Day Program for Deaf-Blind Children at the Perkins School for the Blind are available. Prepared by Miss Elizabeth Banta, the report describes the first full year of the program which was started on an experimental basis in February 1968. Copies of the report are available from Dr. Edward J. Waterhouse, Director, Perkins School for the Blind, 175 North Beacon Street, Watertown, Massachusetts 02172.

■ Several new regional librarians are now heading regional libraries for the blind and physically handicapped cooperating in the Library of Congress program. They are Miss Alene Cooper, Montana Regional Library, Helena; Robert Bellinger, Wisconsin Regional Library, Milwaukee; Leanne Miller, Missouri Regional Library, St. Louis; and Miss Idalia Vazquez, Virgin Islands Regional Library, St. Thomas.

Other changes in the regional library system include: Arkansas, formerly served by the regional library in Oklahoma, is now served by the Arkansas Library Commission, 311 Capital Street, Little Rock, Arkansas 72201, Mrs. Cleotta Mullen, regional librarian; the regional library in Oklahoma, formerly in the State Department of Libraries, is now in the Oklahoma Public Welfare Commission, 1108 N.E. 36th Street, Oklahoma City, Oklahoma 73111, Virginia Rowell, acting regional librarian.

■ On December 12, 1969, the Institute for the Crippled and Disabled presented its George G. Deaver Award for Exceptional Achievement in the Rehabilitation Arts and Sciences to Mary E. Switzer, administrator of the Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare.

■ Thomas A. Benham, president and founder of Science for the Blind, was recently named the 1969 Handicapped Pennsylvanian of the Year by the Pennsylvania Governor's Committee on Employment of the Handicapped. The honor was awarded to Mr. Benham in recognition of his work through Science for the Blind in assisting blind persons to find and qualify for employment in scientific and technical fields. Blind since he was two years old, he established Science for the Blind in 1955. Mr. Benham has been professor of physics and, more recently, engineering at Haverford College since 1942.

■ The leaflet *Guidelines for Helping Deaf-Blind Persons* is available in single copies or small quantities at no charge from Dr. Peter J. Salmon, Administrative Vice-President, Industrial Home for the Blind, 57 Willoughby Street, Brooklyn, New York 11201.

■ On January 10, State Senator Criss Cole of Houston, Texas, served one day as governor of Texas. Blinded in action in World War Two, Senator Cole was first elected to the Texas Senate in 1962, having served eight years in the Texas House of Representatives. Elected president pro tempore of the Senate in September 1969, Senator Cole is now third in line for governor. By tradition the president pro tempore is allowed to serve as governor of the state for one day while the two top executives, Governor Preston Smith and Lieutenant Governor Ben Barnes, leave the state for this purpose.

The theme of Senator Cole's "governor for a day" ceremonies was the education, rehabilitation, and employment of the handicapped. About 400 of his friends and supporters attended the ceremonies.

■ Boston's Catholic Guild for All the Blind has announced that *Blindness: What It Is, What It Does, and How To Live With It*, by the Rev. Thomas J. Carroll, executive director of the Guild, is now available in Portuguese in a limited edition. Originally published by Little, Brown and Company in 1961, the book is also available in English and Arabic. Further information is available from the Catholic Guild for All the Blind, 770 Centre Street, Newton, Massachusetts 02158.

■ A three-week symposium on the role of movement in the education of the normal and of the atypical child will be conducted June 29 to July 17 by Bryant J. Cratty, Ed.D., professor and director of the Perceptual-Motor Learning Laboratory, University of California at Los Angeles. Further information is available from Movement Education, Box 140, Westwood Plaza, Los Angeles, California 90024.

■ On June 25, 1969, a new graduate research institute, the Perceptual Alternatives Laboratory, was established at the University of Louisville. Its director is Emerson Foulke, Ph.D., a professor in the Department of Psychology at the University of Louisville.

The program of research at the Perceptual Alternatives Laboratory includes experiments intended to promote an understanding of the way in which perceptual systems function and to investigate the organization of the stimulus displays processed by perceptual systems.

Research in progress includes studies of the comprehension of rate controlled recorded speech, the characteristics of a recorder-reproducer optimized for the task of reading by listening, the perception of dot patterns, punctographic codes, tactual graphs and maps, the perceptual basis of mobility, and those characteristics of the cane which contribute to its efficiency as a tool for obtaining information about the

sector of the environment of interest to the blind pedestrian, and the cutaneous perception of transduced patterns of acoustical energy.

For further information about the laboratory's research program, write to Emerson Foulke, Perceptual Alternatives Laboratory, University of Louisville, Louisville, Kentucky 40208, or call (502) 636-4385.

■ A record number of blind men and women were self-supporting workers in 1969, collected higher hourly wage rates, and earned more annual income than ever before, according to National Industries for the Blind, New York City.

In its annual report for 1969, it is noted that more than 4,500 blind persons in 78 workshops in 35 states affiliated with NIB were paid an all-time high of \$9,200,000 in wages last year, the first time in the organization's 31-year history that wages exceeded \$9 million. The average hourly wage of blind workers was \$1.67 an hour in 1969, an increase of six percent over 1968. Total sales of the 78 affiliated workshops amounted to \$49,200,000, of which 45 percent represented business with the federal government.

■ In an effort to put the results of rehabilitation research to work more quickly, nine five-year grants have been awarded by the U.S. Social and Rehabilitation Service. Under provisions of the grants, rehabilitation agencies in Alabama, California, Massachusetts, Missouri, Pennsylvania, Texas, Utah, Virginia, and Wisconsin will hire research-utilization specialists who will be responsible for developing principles and techniques for communicating significant research findings to rehabilitation counselors and administrators, and for developing innovative practices in treating handicapped persons. First-year funding under the grants will be about \$40,000 per state.

■ Guidelines for the establishment of model preschool programs for handi-

capped children, authorized under Public Law 90-538, the Handicapped Children's Early Education Assistance Act, are available from Miss Jane DeWeerd, Bureau of Education for the Handicapped, 7th and D Street, S.W., Washington, D.C. 20202.

■ The Delta Gamma Foundation is offering summer scholarships for the training of orthoptists and teachers and consultants for visually handicapped children. Applicants are considered on individual merit and the amount of each grant depends on the cost of the specific training involved. The deadline for applications is April 1. Application blanks and further information may be obtained by writing to Mrs. David Dunbar, 20 Elm Court, Anderson, Indiana 46011.

Coming Events

February 15-21 World Leprosy Week.

April 12-18 National Library Week.

April 19-25 Council for Exceptional Children, 48th Annual International Convention, Chicago.

April 24-25 President's Committee on Employment of the Handicapped, Annual Meeting.

June 1-5 World Federation of Occupational Therapists, Fifth International Congress, Zurich, Switzerland.

June 7-11 Special Libraries Association, Detroit.

July 22-24 American Association of Workers for the Blind, Southwest Regional Meeting, Little Rock.

August 17-21 International Congress on Education of the Deaf, Stockholm, Sweden.

September 24-27 American Association of Workers for the Blind, Western Regional Meeting, Los Angeles (place and dates tentative).

Sensi-Quik

The Touch Cane for Walking
Faster with Safety



Sensi-Quik's contour handle arranges the fingers for quick down-touching and accurate, rhythmic side motion with thumb and finger, minimizing wrist action. The nub at the handle's elbow rides in the crotch of thumb and forefinger, providing purchase for fingers when the hand perspires or when it rains. The tapered-off end reduces "tripping hazard" on crowded sidewalks.

Made of flexible fiberglass, tipped with diamond-hard tungsten carbide, the Sensi-Quik touch cane gives the traveler a sharp signal and alerts other pedestrians to his approach.

The cane's working tip, a carbide disk one-half inch in diameter, gives the user a special advantage in the subway. As he moves across the loading platform toward the train, the carbide tip glides easily over the rough concrete surface, giving off a "rippling" sound. Other riders, alerted by this sound to the traveler's approach, are more likely to help him get aboard.

The carbide tip, originally developed in 1956 for the bamboo model of the Sensi-Quik, is now available for the fiberglass model, which was introduced in 1965 and has been continuously improved ever since. The shaft of the fiberglass cane is tubular in construction, giving adequate strength within necessary restrictions in weight.

The fiberglass model comes with either crook or contour handle and either carbide or replacement steel tip. The bamboo model, still available to those who prefer it, comes with polished wood crook handle and carbide tip.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact

Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

Mr. Franklin S. Clark
The Go-Sees
166 East 92nd Street
New York, N.Y. 10028

THE NEW Outlook FOR THE BLIND

March 1970 Volume 64 Number 3

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On the Accuracy of Obstacle Detection by the Blind -- Part 1

"Obstacle sense" is the term employed for the perceptual process through which a large proportion of blind persons and many seeing individuals are demonstrably able to apprehend, without the aid of vision, an obstacle or other object near to them.

Excluding the more or less mystic explanations in terms of apostulated "sixth sense" and the like, the attempts to account for the obstacle sense crystallized even initially into two rival principal theories: the facial vision and hearing theories. The former—also referred to as facial perception or skin sense theory—maintains that the receptors relevant to the obstacle sense are located in the face, at points not identified in greater detail. During the early phase of scientific investigation this was the prevalent theory. It should also be pointed out that a large majority of the blind obviously experience their obstacle sense as based on face sensations. The hearing theory, on the other hand, represents the view that a person orients himself relying either upon the sources of sound or upon the echoes reflected from the objects. The perception of sounds and echoes need not be conscious in any sense.

□ A group of researchers consisting of Supa, Cotzin, and Dallenbach of Cornell University, succeeded in verifying the hearing theory in the early 1940's. By investigating one factor at a time and eliminating the influence of all other factors, they demonstrated that hearing was both a necessary and a sufficient condition of the obstacle sense. All later experiments have lent support to the results obtained at Cornell.

The obstacle sense is based on an unconscious learning process. Without being aware of it, a person learns that, prior to meeting an obstacle (e.g., a wall), he invariably has an auditory sensation of a certain kind. In the course of time, conditioning takes place: each particular type of auditory sensation. Thus, in approaching an obstacle, the person will experience a special kind of presentiment. He has awareness of the presence of an obstacle, though he is unable to describe how. This awareness and an ability to state how it comes about are two entirely different things.

In regard to the phenomenology of the obstacle sense, blind persons can be divided into two groups: a skin sensation group and an auditory group. Those belonging to the former experience, in the presence of an obstacle, a peculiar skin sensation, sometimes on the shoulders, breast, the top of the head, the back of the head, and the neck. This sensation resembles one caused by a veil or a cobweb. Those in the auditory group simply maintain that they hear the obstacles approaching.

This paper was originally published in the Reports from the Institute of Occupational Health series.

JYRKI JUURMAA

Mr. Juurmaa is on the staff of the Institute of Occupational Health, Helsinki, Finland

Verification of Hearing Theory

Phenomenology of the obstacle sense

Concerning the distinction to be made between the functional and the phenomenal, the following questions of some interest and theoretical importance are asked: (1) Why do some individuals experience the relevant sensations as facial, even though it is actually hearing that they rely upon? (2) Why do some individuals believe that they experience auditory impressions that never exceed the stimulus threshold? So far, no explanation to account for this phenomenological difference has been found. A brief description of certain hypotheses will, however, be given below. There is reason to emphasize in this context that the blind have, as a rule, very vague ideas about their capacity for obstacle perception, in quantitative terms. This topic will be discussed in the empirical part of this study.

□ We may start from the postulate that it is natural for a person to seek an explanation for his ability to avoid obstacles. The face—which is continuously exposed to varied air currents and variations in temperature—is easily experienced as the part of the body that receives the sensations concerned. *Thus, on this hypothesis, a conscious link is created between a particular type of experience and skin sensations.* Another possible explanation, not attended to previously, should also be mentioned here. When a person meets an obstacle, it is, of course, his head and face he is likely to injure first. When a person has unconsciously learned to sense the approaching obstacles, the muscle potential tension is liable to rise mainly in his facial muscles and in the region of the head. He will experience a tenseness in his face. Thus, the following chain of events is likely to occur: an unconscious echo sensation—an unconscious conviction of the presence of an obstacle—an unconscious tendency to protect the face—an awareness of a change in the facial sensations. The assumption that the basis of the obstacle sense is to be found in the central nervous system is also compatible with the fact that anesthetization of the face leaves the phenomenological experience in obstacle sense performancy unaffected.

Paradoxically, it is perhaps more difficult still to explain why certain persons believe that they can perceive subliminal sounds. One possibility would be to assume that in these individuals the line dividing the conscious from the unconscious is less distinct and hazier than in other individuals. This assumption is difficult to test empirically. Another possibility would be to suppose that auditory sensations predominate and are unusually vivid in these persons. Finally, the following very simple explanation could be suggested: these persons, like any others, are of course able to hear the most intensive echoes, and this causes them to associate auditory sensations with those experiences where the echoes do not in fact exceed the stimulus threshold.

The study of these topics should be begun by seeking to discover how far there are phenomenologically pure types. Insofar as such groups could be formed (e.g., clear-cut skin sensation and hearing groups), the next task would be to find out whether there are inter-group differences in the obstacle sense performances.

□ As early as 1793, Spallanzani discovered the secret of the bat; that is,

Distinction between functional and phenomenal

Why Obstacle Sense is Experienced on Face

The Hearing Group

the fact that bats orient themselves with the aid of hearing. Yet it was not until about three decades ago that Pierce and Griffin succeeded in shedding additional light on the problem. By now, it is known that bats orient themselves by emitting high-frequency orientation sounds and receiving the echoes. The frequency of the orientation sounds emitted by the bat is as high as 50,000 to 70,000 c.p.c. in the vicinity of an obstacle and about 30,000 c.p.c. in free air. Thus they may be able to perceive an aerial measuring not more than 1 mm. in diameter. These discoveries gave a strong impetus to the idea that sonar devices should be developed for blind persons. It should also be briefly mentioned that whales, porpoises, sea lions, and several nocturnal birds orient themselves by ultrasonic echoes. It has been discovered, moreover, that these animals not only perceive tiny objects but make accurate observations of changes in distances, size, and material. For example, dolphins are able to distinguish the fish on which they feed from other kinds of fish on the basis of echoes.

A differential-psychological study conducted at the Institute of Occupational Health, Helsinki, (Juurmaa, 1965) revealed that an obstacle sense was demonstrably present in about 85 percent of blind persons. In this study, 53 totally blind males served as subjects. The study also showed that the obstacle sense correlated with early onset and long duration of blindness. The obstacle sense was completely independent of the intelligence variables investigated. However, it correlated with the acuity of audition, as measured in terms of audiometric variables; the correlations were highest within the high pitch range and with (Seashor's A-series) pitch discrimination. It is also of interest that the sound localization ability and the ability to maintain the direction of locomotion correlated with the obstacle sense.

Sound discrimination. For man, the range of audibility runs from 20 to 20,000 c.p.s. Man is capable of distinguishing about 1,400 pitch steps and some 350 intensity steps. Consequently the number of distinguishable tones is likely to total 340,000. Moreover, it seems legitimate to suppose that the number of unconsciously distinguishable tones is larger still. The deterioration with advancing age starts from high frequencies and later embraces the middle range as well. Cotzin and Dallenbach (1950) felt that the frequency range around 10,000 c.p.s. and somewhat above this value was particularly important for the obstacle sense. The Austrian Kohler (1964) has emphasized, however, that the differential threshold values are more essential for the perception of obstacles than the stimulus threshold values obtained through audiometric measurements. In other words, discrimination and the perception of changes is more important than whether or not a certain particular sound can be heard. The experiments carried out at the Institute of Occupational Health (Juurmaa, 1965) also produced evidence in support of Kohler's thesis. Kohler found that the obstacle sense correlated with audiometric variables to the extent of .20 to .40. To explore the ability to discriminate changes in sound, Kohler devised an apparatus producing both constant and fluctuating sounds. A recording device indicated accurately the points in time when the examinee found the fluctuation to start and to cease.

It turned out that the correlation for 48 examinees between the obstacle sense and the perception of the changes in sound was as high as .78. The result should be interpreted with care, however, since Kohler did not give the age range of his subjects, nor did he control the general reaction speed.

The sound shadow. If two sounds reach the ear in rapid succession, a so-called sound shadow results. This happens especially when the amplitude of the first sound is larger than that of the second. Such a situation is frequently encountered when sounds are made to produce echoes reflected from solid objects: the original sound will overshadow the echo. This is due to the fact that the nerve cells, excited by the first sound, have not yet regained equilibrium when the second sound arrives. When efforts are made to discover a suitable orientation sound, this sound shadow phenomenon must be taken into consideration. Wegel and Lane (1924) have demonstrated that low sounds overshadow high sounds more easily than the other way round. It has also been shown that sounds with the same frequency overshadow each other more easily than sounds differing in frequency.

Optimal Orientation Sound. What is an optimal orientation sound like? When an attempt is made to answer this question, it is immediately evident that some facts speak for high and others for low sounds. A compromise must be made, taking into consideration both the physiological characteristics of the ear and the physical properties of sound. Very high pitches are impossible to utilize for a variety of reasons: discrimination in the high-frequency range is rough; the loss of hearing starts from high sounds; low sounds easily overshadow high ones; fading takes place relatively soon when a high sound continues; only a small fraction of the echoes reflected from tilted surfaces is within the reach of the producer of the sound. The low sounds fall through simply because they are not capable enough to indicate the changes in distance. Thus, the middle range must have a frequency varying between 1,000 and 4,000 c.p.s., depending on the situation. It should be mentioned at this point that many blind people are in the habit of producing artificial orientation sounds—for example, through knocking with the cane, snapping their fingers, whistling, scraping the ground with their shoes, and so on. It seems probable that systematic training might improve the results considerably in this respect.

□ Once it proved possible to show what the psycho-physiological foundation of the obstacle sense was and to demonstrate what proportion of blind persons possess it, it was natural to proceed to explore how small differences in the distance, size, shape, and material of the obstacle can be distinguished. So far, however, only a few studies concerning the differential thresholds in obstacle perception have been carried out. When the study to be reported here had been brought to completion, the writer received a report of the study conducted by Rice (1965), in the United States, where the problems investigated were largely similar. The most noteworthy among previous studies may be the one performed by Kellogg (1962), upon which Rice's study was based in part. There is reason to give an account of these two stud-

The sound shadow

Optimal orientation sound

Differential Thresholds in Obstacle Perception

ies here. And it seems obvious that similar studies, on a large scale, are being considered or are already under way.

Kellogg investigated how the observations made by a sitting subject depended upon the size, distance, and material of the target. The experiments took place in a soundproof room, measuring 3.6 x 2.7 x 3.4 m. Small plywood discs were used for the targets. The targets were moved noiselessly at varied distances from the subject. The subject was permitted to speak, snap his fingers, whistle, knock the floor, and so on. He was only forbidden to reach his body or arms forwards. Two blind and two sighted persons were the subjects. The results of the different types of experiments follows.

□ The target was a plywood disc, measuring 30 cm. in diameter. Seven distances were measured along a path on a level with the subject's face. The middlemost (60 cm.) was used as a standard of comparison. The shortest distance was 30 cm., and the longest was 120 cm. Use was made of the method of paired comparisons: each of the other six distances was compared 100 times with the constant standard distance. It was found that, irrespective of the distance, the frequency of correct performances by the seeing varied only slightly on both sides of 50. Thus, their performances were merely guesswork. The results from the blind persons clearly indicated that they were able to discriminate between different distances. One of the blind subjects was able to conclude, on the basis of the echoes reflected from the disc at a distance of 60 cm., whether the target was moving toward him or away from him if the distance traveled exceeded 10 cm. Kellogg felt that this subject's discriminative sensitivity was somewhat better than that of a sighted person utilizing only one eye.

In investigating the perception of size, the experimental design was similar in principle. There was a standard disc, measuring 22.5 cm. in diameter, and each of the smaller and larger discs was compared with it. The smallest disc was 15 cm. in diameter, and the largest was 30 cm. in diameter. The entire series of comparisons was performed at three distances 30 cm., 45 cm., and 60 cm. In these experiments too, the blind subjects revealed a considerable discriminative ability. However, the performances of one subject deteriorated as a function of the distance.

In material discrimination, discs measuring 30 cm. in diameter and made of six different materials were compared. Each of the six discs was compared 100 times with each of the other five. The differences in surface hardness were clearly reflected by the results. Metal was distinguished from other materials, except glass. Glass was confused with both metal and wood. Plain wood and painted wood were intermixed. Cloth was distinguished from the four materials mentioned; and, surprisingly enough, the blind subjects were able to discriminate between velvet and denim.

Kellogg's results provide extremely encouraging starting points for further investigation. It should be pointed out that his study was only concerned with comparatively small sizes and short distances.

□ *Rice's study.* Rice's problems were the following: (1) How small a tar-

Research

Kellogg's Study

Rice's Study

get can be reliably detected? (2) How are size and distance related in this minimal size measurement? (3) How small a difference in size must exist between two targets before one is no longer reliably reported to be smaller or larger than the other? (4) What effect does the shape, location, area, and orientation of a target have on its detectability? Four blind males, age 20 to 30, served as subjects. The experiments took place in a room that was relatively isolated from noises outside the laboratory, and the walls, ceiling, and floor were covered with sound absorbing materials. The apparatus used to present the circular sheet metal targets to the subject extended down from a cupola above the room. The targets were raised and lowered on a metal rod by an experimenter in the room above.

The first experiment dealt with how small a target could reliably be detected by each subject. At the same time, the effect of subject-to-target distance was assessed. Initially, the distance was 45 cm., and the target measured 48.8 cm. in diameter. A series of practice trials were run using an equal number of target and no-target trials in a counterbalanced order. The subjects were given information concerning the accuracy of their judgments. When the subject could successfully discriminate between target and no-target, a smaller target was introduced. This procedure was continued until the smallest target detectable with 90 to 100 percent accuracy was found. This target was then used as the largest in a series of five subsequent stimuli. Each of the smaller targets were 60 percent by area of the next larger. Each of the five targets was compared in randomized order with the no-target situation.

A similar, but abbreviated, procedure was followed in locating a range of five targets at 60, 75, 90, 105, and 120 cm. The data obtained from the measurements at 60 to 120 cm. suggested that the auditory angle subtended by a target was related to the probability of a "yes" response at any distance from the subject. Using this hypothesis, targets predicted to have high, medium, and low probabilities of detection were made for each of the longer distances: 167.5, 217.5, and 270 cm.

The results showed that the echo acuity of blind subjects was a function of both target size and the distance between subject and target. A response threshold target was calculated for each subject and distance. This was a target size which was estimated to be detected 50 percent of its presentations at a given distance. It proved that the mean auditory angle for all distances and subjects was 4.63° with a standard deviation of 0.21° . It appeared that the auditory angle subtended by the target in front of the subject was a good predictor of the subject's response threshold. The auditory angle was regarded as an arc on the horizontal plane at the height of the ears. As for the size discrimination experiments, the best subject was able to discriminate between a standard disc measuring 9 cm. in diameter and discs 5 mm. smaller or larger in diameter in 70 percent of the cases when the distance in diameter was 10 mm. in either direction. When the distance was 90 cm. and the diameter of the target was 13 cm., a difference of 1 cm. was detected in 83 percent of the cases. When the distance was 120 cm. and the diameter of the standard was 21.5 cm., a difference of 1 cm. was only de-

Echo acuity of blind persons

tected in 60 percent of the cases, and a difference of 2 cm. in 90 percent. The percentage of correct responses was, of course, in direct relation to the size of the differences at all distances and for all subjects.

Rice also investigated the bearing of the shape of the target on detectability. The only significant effect was found to be due to the dimension variable. The direction of this difference was a significant decrease in the frequency of detections as the ratio of the rectangle's width to length dimension variable. The direction of this difference was a significant decrease in the frequency of detections as the ratio of the rectangle's width to length dimensions increased. That is, the 2 by 8 target was perceived less than the 4 by 4 and the 1 by 16 target less than the 2 by 8 target. No significant effect upon accuracy of detection occurred as a result of orienting the long dimensions of the 2 by 8 and 1 by 16 targets to either the horizontal or vertical plane.

□ After the riddle of the obstacle sense had been solved and the modern radar and sonar devices had been invented, it was natural to ask how far it would be possible for blind persons to utilize comparable devices to obtain clearly and rapidly interpretable information from the environment. Strong optimism preceded the first experiments. It was perhaps forgotten, however, that, when employed by the blind, the device would not be operated and the information received would not be interpreted by any automatic mechanism, but, instead, by the human brain with all its psychological and physiological limitations. Little attention was given to another circumstance: there was virtually no knowledge about the acuity of obstacle discrimination man is able to reach relying exclusively upon the natural functions of the ear.

In detecting objects at a distance, guidance devices for the blind operate on one of three main principles. (1) Transmission of audible orientation sound. This method has the merit that the ears remain free to receive echoes other than those produced by the orientation sound. The transmission of the orientation sound is merely a technical problem. A drawback difficult to overcome is formed by the sound shadow. (2) Transmission of ultrasonic sounds. A device operating on this principle consequently transmits sound waves exceeding the audible frequency range; that is, their frequency is in excess of 20,000 c.p.s. This of course necessitates the use of an additional device transposing the echoes so as to exceed the stimulus threshold. The greatest accuracy in the estimation of distances is attained by means of ultrasonic echoes. The method has the shortcoming, however, that the person using such a device has no opportunity to observe other sounds in his environment. We shall presently return to discuss an ultrasonic mobility aid of this kind. (3) The use of photoelectric cells. Here, the light reflected from various surfaces, differing in brightness, serves as the stimulus, and the differences in brightness are then transposed into auditory signals, for example. In 1957 Kohler advanced the proposal that the ultrasonic devices will be supplanted by photoelectric ones. At least in England, however, the photoelectric mobility aids have attracted little interest: experimenting with ultrasonic systems has been continued eagerly.

Guidance Devices for the Blind

It is by no means necessary to convert the light and ultrasonic signals into acoustic stimuli. Transposition into tactual sensations or into an electric stimulation of the skin, associated with tactile and pressure sensations is also possible. Account must, however, be taken of the characteristics peculiar to the sense department concerned, such as the differential and stimulus thresholds, adaptation, and so on. *To be continued.*

The second and final part of this article will appear in next month's *New Outlook*.

Mary E. Switzer Resigns SRS Post

Mary E. Switzer, administrator of the Social and Rehabilitation Service, Department of Health, Education, and Welfare, since 1967, submitted her resignation effective February 28, 1970. She now heads the Washington office of the World Rehabilitation Fund (WRF).

A veteran of 48 years of government service, Miss Switzer began her long career with the federal government shortly after her graduation from Radcliffe College in 1922 when she joined the Department of the Treasury. In 1950, Miss Switzer became director of the Office of Vocational Rehabilitation and in 1963 she was made commissioner of the Vocational Rehabilitation Administration as part of the HEW reorganization which also created the Welfare Administration.

Miss Switzer's efforts on behalf of the international rehabilitation community are well known. She has represented the United States at many international health and rehabilitation meetings, including the one that developed the constitution for the World Health Organization. In September 1968, she was vice chairman of the U.S. delegation to the First U.N. Conference of Ministers responsible for Social Welfare and also in September 1968 she was elected vice president for North America and member of the Council of the International Society for Rehabilitation of the Disabled.

Miss Switzer was elected vice president of the World Rehabilitation Fund by its Board of Directors on December 2, 1969. In her new capacity, Miss Switzer will be in charge of an office to be opened in Washington, D.C., in the near future. The office will be responsible for WRF's relationship with the federal government, with national and international voluntary agencies, and international health agencies. She will also provide direct consultation services on behalf of WRF to foreign governments and national and international voluntary agencies. Miss Switzer said she will also be associated with the Association of Schools for Allied Health Professions in Washington, D.C.

Research on Criteria for Measuring Mobility

Readiness of Adventitiously Blind Adults

Much has been said about client "readiness" for mobility services, some literature is available on the subject, and the term itself is commonly used in appropriate rehabilitation circles; however, when it comes to measuring degree of readiness in terms of specific factors of the dynamic concept, little definitive research information is available.

The New Hampshire Association for the Blind, a private, non-profit agency providing statewide services, conducted a three-year research-oriented project entitled, "A Statewide Community Oriented Mobility and Orientation Program in New Hampshire" (August 1965-July 1968).^{*} A teamwork approach to mobility service, including coordinated casework counselling, was provided, as appropriate, to 91 different legally blind persons on a community basis. During the project, research was conducted to identify criteria for measuring the mobility readiness of adventitiously blind adults.[†]

□ Although little has been written on the specific subject of readiness for mobility service, there are many references, both general and specific, regarding the importance of emotional, psychological, and sociological factors in relation to successful use of service.

Cholden, in his numerous papers on blindness, pointed out the absolute necessity for the permanently blind individual to recognize and accept the loss of sight to pave the way for effective rehabilitation. Cholden also discussed the almost inevitable, and perhaps necessary, depressive period following blindness and the succeeding stages of normal adjustment. Carroll similarly described this situation in terms of death of the sighted person.

Factors mentioned in the literature relating to successful use of mobility service include: a supportive family milieu (Cholden,⁵ Carroll,⁴ Curtin,⁶ Murphy,¹⁸ S.R.S. Project Report 1415,⁷ Wilson²¹), acceptance of the white cane (Bledsoe³), emotional and psychological readiness (Dupress,⁸ Graham,¹⁰ S.R.S. Project Report 1415⁷), health (Graham,¹⁰ Keating¹²), motivation and need (Keating,¹² S.R.S. Project Report 1169¹⁵).

The factor of intelligence is mentioned several times in the literature, but its relationship to mobility is not clearly established.

Very few attempts have been made to measure readiness for mobility ser-

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Review of Literature

Published results are not conclusive

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[†] Special acknowledgement is made to Gale N. Stickler, A.C.S.W., executive director and mobility project director, New Hampshire Association for the Blind; Donald D. LoGuidice, M.Ed., peripatology supervisor; and Edward F. Rutledge, Ph.D., research consultant, whose cooperation made this research possible.

vice and published results are not conclusive. Winer²² developed a test and interview battery to relate mobility competency to IQ and emotional stability. Menzel, Shapira, and Dreifuss¹⁶ developed an extensive proposed test for mobility training readiness for use in the Israel Institute for Orientation and Mobility of the Blind, a center setting. Their recommendation for evaluation of quite comprehensive data in many areas was on the basis of the whole personality of the potential candidate rather than a point system. Gray and Todd¹¹ conducted a study of the characteristics of blind travellers in England and Wales. Focus was on experience rather than attitudes.

Gallagher⁹ studied the use of the Pattern Board Subtest (HIS) as an indicator of mobility readiness for blind adolescents. Results appeared significantly positive, but further research was indicated.

The concept of readiness for mobility service, implying that a client's general situation is favorable for successful use of service at a given time, was a basic principle of the project. A caseworker was included on the project staff to help determine readiness and to work with the various problems, not directly part of the teaching plan, as they arose.

As the program progressed, it became even more evident that clients possessed different degrees of readiness and, indeed, some were distinctly not-ready. Many dynamic factors seemed to contribute to degrees of readiness.

□ Research was initiated with two major goals: one, to attempt to identify specific component factors of client readiness; and two, to attempt to construct an instrument for measuring total readiness of adventitiously blind adults.

Initial consideration was given the two major categories of blindness, congenital and adventitious. Hypothesized criteria were developed to attempt to measure the mobility potential of adventitiously blinded adults over the age of 18 years. Congenitally blind trainees were not included in this research since they had never known sight and sightlessness was part of their personality development.

Considerable research in the field of blindness indicated that the newly blind person may go through various physical, psychological, and emotional stages of reorganization for life with a visual impairment, and that readiness for service may change with these stages or subsequent disorganizing experiences. It was, therefore, also recognized that mobility potential, within limits, could change over time. Basic to these ideas, however, was a recognition of the definite (but usually modifiable) individual personality pattern.

Criteria were selected by the casework supervisor on the basis of his five years of experience with mobility service and a review of the literature. The first research draft consisted of four proposed criteria:

1. Physically capable for required activity according to medical authority.
2. Basic subsistence needs met.
3. Beyond shock stage of frequent depressions and able to consider some beginning steps for rehabilitation.

Research background

Two Goals of Research

Preliminary research criteria

4. At least beginning realistic understanding and acceptance of eye problem and current visual acuity.

Each criterion was rated by the caseworker from intake information on the scale: exceptionally ready/very adequately ready/adequately ready/poorly ready/not at all ready.

Using this scale, agreement between caseworkers was unsatisfactory on the fourth criterion and the categories "exceptionally ready" and "not at all ready" were not used at all. The four criteria were found to be ambiguous and appeared to be combinations of several other factors. An expanded research draft was developed which included a scale that provided a wider range of comparison.

□ The final research consisted of 14 criteria grouped in three general categories: physiological, psychosocial, and emotional. These will be described as they appeared on the readiness schedule, but in expanded outline form.

Final Research Criteria

I. Physiological Criteria

Three physiological criteria

- A. *Health*: A physician's approval for the individualized training plan, whether limited or extensive, was a basic requirement for service, so that each person receiving training was physically fit for the amount of training involved. It was believed, however, that variations of health above the minimal acceptance standard might be a factor of readiness. Health was rated from a medical report.
- B. *Hearing*: Since the maximum use of hearing is an important part of successful mobility, acuity of hearing was included as a possible factor. Hearing was rated, when possible, from a medical report or audiogram.
- C. *Stability of Eye Condition*: It had been observed that a patient rapidly losing vision or undergoing intensive treatment was often so involved in the immediate problem that little emotional energy appeared to be available for an intensive rehabilitation service like mobility. This factor was rated from a physician's eye report.

II. Psycho-social Criteria

Six psycho-social criteria

- A. *Intelligence*: The review of literature revealed conflicting information regarding the relationship of intelligence to mobility. Since it might be a factor, it was included. Intelligence, where possible, was rated from a psychometric examination; however, in the majority of cases, this was not available and the factor was rated by the caseworker from his knowledge of the client.
- B. *Income and Housing*: It was believed that a client, struggling with insufficient income or housing, might have reduced emotional energy available for effective use of service. This factor was rated from social history information.

- C. *Supportive Home (or Living Situation) Milieu*: The literature was replete with references to the importance of a supportive milieu, and this coincided with the experience of the caseworker. This factor was rated by the caseworker from his knowledge of the milieu.
- D. *Motivation*: Some degree of motivation appeared necessary for effective use of a service which required considerable cooperation on the part of the client. Motivation was rated by the caseworker from his knowledge of the client.
- E. *Need*: Since some clients have a greater need than others, it was believed that need might be a factor. Need was rated by the caseworker on the basis of his knowledge of the client.
- F. *Adjustment Prior to Blindness*: Psychiatry, psychology, and social work emphasize the importance of prior functioning to successful life with a handicap. Prior adjustment was rated by the caseworker from social history information, such as occupational history, education, marital history, social effectiveness, etc.

III. Emotional Criteria

Five emotional criteria

- A. *Freedom From Depressive Episodes*: Cholden, Carroll, and others have described the initial depressive period following loss of sight and suggested that aggressive rehabilitation services are not appropriate during this period. Cholden has further hypothesized that the longer or more recurrent the depressive episodes, the more difficult is the rehabilitation. This factor was rated by the caseworker from his knowledge of the client.
- B. *Realistic Acceptance of Eye Problem and Current Visual Acuity*: Somewhat related to III.A., it was believed that a client who was ambivalent over his self-image as a visually handicapped person, would have little available emotional energy for effective use of mobility service. This factor was rated by the caseworker from his knowledge of the client. (Note: "acceptance" refers to the ability to integrate the visual reality into individual functioning.)
- C. *Willingness for Relatives, Friends and Community To Know of Blindness*: Also related to II.A. and II.B., ambivalence about others knowing of blindness had been observed to interfere with mobility effectiveness. This factor was rated by the caseworker on the basis of his knowledge of the client.
- D. *Willingness To Leave Home Area With Human Guide*: Closely related to II.B. and II.C., the attitude toward and effective use of the human guide was believed to be a factor. This factor was rated by the caseworker on the basis of his knowledge of the client.
- E. *Acceptance of the White Cane*: Since the white cane is a very obvious symbol of blindness and almost all peripatology clients must use this mobility device, client attitude towards the cane was believed to be important. This factor was rated by the caseworker from his knowl-

edge of the client. (Note: "acceptance" in this criterion refers to the ability to integrate the use of a white cane into individual functioning.)

Each criterion was rated on the scale: exceptional/above average/average/below average/very poor.

Instructions were given the three caseworkers involved in reliability testing. These three workers had similar educational orientation (M.S.W., A.C.S.W.) and had worked as a unit for several years. It was found that a uniform standard for the "average" rating of each criterion, shown in Table 1, clarified the other ratings in the scale for the caseworkers involved.

Rating each of the criteria

<i>Criterion</i>	<i>Standard for Average Rating</i>
I. Physiological*	
A. Health	No significant health problem
B. Hearing	Normal range
C. Stability of Eye Condition and Treatment	Stable
II. Psycho-social	
A. Intelligence	I.Q. 90-110
B. Income and Housing	Able to manage satisfactorily without financial assistance
C. Supportive Home Milieu	No significant problem, some support
D. Motivation for Training	Some interest, willing to try
E. Need for Training	Social, recreational
F. Adjustment Prior to Blindness	Functioned satisfactorily
III. Emotional	
A. Freedom From Depressive Episodes	No significant depression
B. Realistic Acceptance of Eye Problem and Current Visual Acuity	Able to integrate visual reality into individual functioning
C. Willingness for Friends, Relatives, and Community To Know Blindness	No significant problem
D. Willingness To Leave Home Area With Human Guide	No significant problem
E. Acceptance of White Cane	Able to integrate use of the white cane realistically into individual functioning

TABLE 1
Uniform Standards for the "Average"
Rating of Criteria

* Rankings above "average" were seldom appropriate for these categories.

Five criteria (I.A., B., C.; II.A., B.) could be rated from medical reports and basic intake information. Three criteria (II.C.; III.C., D.) could be rated from easily observable information. The remaining six criteria required objective judgments by the caseworker. However, since a study process (including basic reports and social history) preceded mobility referral, considerable information was available.

Two caseworkers (the project caseworker and one other) rated the same 25 clients independently on the final research draft of the readiness schedule before it was made operational. The rate of agreement between raters on the 14 individual criteria was 83 percent. The rate of agreement between raters on

The rate of agreement between different raters

the 25 total readiness scores was 84 percent. All of the schedules used for the final research draft were completed by the project caseworker.

□ After the reliability of the readiness score was established, a satisfactory method of correlating readiness with mobility performance was explored. It appeared that a direct correlation with the final mobility score of the client, as rated independently by the peripatologist, was the best method. The final performance score was an average of the performance scores on all individual techniques taught. It was recognized, however, that readiness for service implied more than just the ability to perform satisfactorily during training and that other factors might be involved, e.g., successful completion of training and using the training appropriately after completion.

The 61 adventitiously blind adults who received mobility training were rated by the readiness scale. There were 35 males and 26 females, ranging in age from 23 to 86 years.

Each client was rated on each of the 14 criteria with the five-point scale. A numerical scoring value was assigned each of the five points, exceptional having a value of four; above average, three; average, two; below average, one; and very poor, zero.

The final readiness score for each trainee was the sum of the scores of the 14 criteria. Thus, the possible range of values was 0-56; the obtained range was 16-36, with a mean, median, and modal score of 26, and a standard deviation of 5.5.

The readiness scores were then compared with the peripatology performance scores. As suspected initially, there were six clients whose performance scores did not appear to truly reflect their experience in mobility training. Further examination revealed that four of these clients had demonstrated good mastery of skills at the beginning of training and received a corresponding satisfactory peripatology grade but they had become so threatened by training that they had had to discontinue before completion. The other two clients finished the course but were basically too fearful to make use of the training. These six scores were adjusted to more truly reflect the mobility mastery of these clients in relation to the other clients in the sample.

Readiness scores of the 61 adventitiously blind adults were then correlated with their corresponding mobility scores. The numerical scale for scoring mobility was changed from a five-point scale to a three-point scale during the study. Since numerical values for the two scales were not equivalent, each trainee was assigned a Z score based on the distribution of scores for the scale on which he was scored. The validity coefficient between readiness and mobility score was $r = .49$ which is significant to less than the .01 level.

The 14 criteria were analyzed to determine the degree of relationship to total readiness scores and performance scores. Tests of significance were not performed on each η . In most cases, the criteria which were highly related to the readiness score were also highly related to performance.

□ New readiness scores were computed for the clients using first six and then eight of the criteria with the highest positive correlation with actual performance scores. Using either six or eight criteria, a correlation of the new readi-

Preliminary Results

Some scores were adjusted

Correlation of readiness and mobility scores

Final Results

<i>Criterion</i>	<i>η^P</i>	<i>η^R</i>
Willingness To Leave Home Area With Human Guide	.48	.45
Realistic Acceptance of Eye Problem and Current Visual Acuity	.40	.60
Need for Training	.37	.13
Intelligence	.35	.50
Motivation for Training	.33	.56
Willingness for Relatives, Friends, and Community To Know of Blindness	.33	.54
Acceptance of White Cane	.30	.58
Adjustment Prior to Blindness	.22	.50
Freedom From Depressive Episodes	.22	.32
Health	.22	.39
Supportive Milieu	.22	.36
Income and Housing	.10	.55
Stability of Eye Condition and Treatment	.10	.37
Hearing	.08	.04

TABLE 2
 η Values for Readiness and
 Performance Scores of 61 Clients
 Compared with 14 Individual Criteria

ness scores with performance scores resulted in a validity coefficient of $r = .54$ which is significant to less than the .01 level.

The following eight criteria appear to be important factors in the dynamics of readiness for mobility service and could provide a sound basis for further research:

1. Willingness to leave home area with human guide
2. Realistic acceptance of eye problem and current visual acuity*
3. Need for training
4. Intelligence
5. Motivation for training
6. Willingness for relatives, friends, and community to know of blindness
7. Acceptance of white cane*
8. Adjustment prior to blindness*

It should be noted that, while five of the original 14 criteria could be rated from objective reports, only one of the final eight (#4) could be so rated. Two others (#1,#6) could be rated from easily observable information. The remaining five criteria required objective judgments by trained workers with experience and understanding of personality development and the rehabilitation process.

□ This research on the dynamics of readiness for mobility service had two major research goals, to attempt to identify specific dynamic factors of readiness of adventitiously blind adults and to construct an instrument for measuring total readiness.

Fourteen criteria were found to have a positive relationship to both the readiness score and the actual subsequent performance score. A readiness instrument composed of eight criteria was found to have a positive correlation with performance, significant to less than the .01 level.

This research study appears to have identified important specific factors re-

Summary and Implications

* In future research, the author would restate and further clarify criteria nos. 2, 7, and 8, deleting the words "acceptance" and "adjustment" (e.g., "8. Level of social functioning prior to blindness").

lated to readiness for mobility service. Although the relationship between the resulting research instrument and performance does suggest its usefulness in assessing readiness, further research is indicated.

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Some Guidelines for Providing In-Service Training to the Staff of Nursing Homes and Homes for the Aged

During the past year, the American Foundation for the Blind has had an increasing number of requests for some guidelines for providing in-service training for the staffs of various kinds of hospitals, nursing homes, and homes for the aged. A small number of agencies specializing in providing services to blind persons have also been actively involved in in-service training for the staffs of nursing homes. However, because the need for this kind of in-service training is so widespread and should be conducted by agencies throughout the country, and information about how to do it is lacking, the Foundation has decided to provide some informal Guidelines for in-service training of the staffs of these institutions.

□ Accurate statistics on the numbers of blind and visually impaired persons in hospitals, nursing homes, and homes for the aged are not available. But Dr. Herbert Rusalem, in his article, "A Study of Incidence of Blindness in Homes for the Aged and Nursing Homes," wrote, "The incidence of blindness in homes for the aged and nursing homes is far greater than previously supposed."¹

Dr. Rusalem also stated that, "The recognized blind resident is usually treated as a highly dependent and incompetent individual. Innumerable cases were reported in which residents were confined to their rooms, or even their beds, despite the fact that blindness was the only major physical limitation."²

It is obvious that the staffs of hospitals, nursing homes, and homes for the aged need to be aware that blindness itself does not cause a person to be totally dependent, that the blind person can be taught to perform his own daily living activities, and that he will feel much better if he is given this opportunity. He should be permitted to feed himself, dress himself, and walk around in his immediate environment and other areas of the home and hospital where it is essential for him to go. Special efforts should be made to help him become involved in occupational therapy and recreational activities. The patient's family should be involved in the planning also if they take him home for weekends or for other visits. It is important for them to have a good understanding of both his limitations and his abilities to function independently.

The staff must also be familiar with the many special services available to blind persons, and where and how to obtain these services. They should be taught how to refer the patient. Following are examples of some of the decisions on referrals they should be able to make: the point at which a patient should be referred to a specialized agency for training in mobility and personal adjustment, social casework, and recreation; whether a local agency,

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Numbers of Blind Residents

Areas where staff needs help

the hospital's social work staff (if it has one), or a specialized agency serving blind persons should be called in to provide the patient's family with an understanding of his blindness.

□ With the above in mind, and prior to developing the following Guidelines, the American Foundation for the Blind conducted an in-service training workshop for The Daughters of Jacob Home and Hospital, Bronx, N.Y. Although the AFB staff had previously been involved in numerous situations where in-service training was provided, it was felt that the best way to develop the proposed Guidelines was to run in-service training sessions at a hospital. So a request for such a workshop from the Daughters of Jacob was accepted. The first step was conferences between the staffs of the AFB and the hospital to enable the Foundation to learn the needs of the Hospital's staff and patients, and the Hospital staff to learn about the specialized services available to visually impaired persons.

The Hospital's intake policies discouraged the acceptance of blind patients as residents because the administration felt that the staff did not have the specialized knowledge to handle the needs of these patients. However, several patients had become blind since admittance. At the time of the workshop, the Hospital had more than 1000 residents, of whom 20 were recognized as being blind. These 20 were kept in the infirmary and their daily needs were met by the nursing staff.

□ Twenty-four Hospital staff members were selected to take the in-service training. However, it was decided to also invite the entire administrative staff and department heads to the general session; and to provide more intensive training for the 24 in small groups. This consisted of actual demonstrations and discussions of attitudes toward blindness. The 24 were divided into three groups of eight each for these sessions, assigned alternately to the three workshop instructors.

The material covered in the general sessions was designed to meet the needs of the administrators, department heads, and other staff. In the first general session the historical perspective of services to the blind, including attitudes toward blind persons, medical information on the functioning of the eye, some pathology, social implications of eye diseases and severe visual limitation, and an overview of the workshop were discussed.

The three instructors who had major responsibility for the workshop were a social caseworker, an orientation and mobility instructor, and an instructor in personal adjustment. As mentioned earlier, these three met alternately with the three groups of eight staff members so that all of the trainees would have instruction in the same materials. The groups were composed of persons from various disciplines. Each had a director or supervisor of nursing, a nurse, an occupational therapist, a social worker, a group worker, an orderly, and a volunteer. The volunteers were found the least able to use, tolerate, or even accept the information offered. In most instances, they became quite upset and could only think of "a poor blind relative." Some of the most valuable discussions that occurred in the groups was offered by the orderlies. Of course, the professional staff also contributed to the discussions

Prototype Workshop Held

Staff Invited to Workshop

Subjects covered

and was not only able to grasp the information received, but was eager for more training. A panel discussion and an evaluation comprised the final session. In the panel discussion, the information received during the workshop was pulled together and summarized. During the evaluation part, the staff who received the training were asked to discuss their thoughts and reactions, and offer recommendations. Administrative staff was also present at this session.

Following are the conclusions and recommendations that arose from this final meeting:

- ☐ 1. The staff became more sensitive to the needs of blind patients as well as other patients in their areas.
- 2. The intake policies of the Hospital were changed to allow the admittance of blind persons. In fact, one was admitted about a month after the workshop was held. This change in policy occurred because the Administrator felt that the staff, as a result of the in-service training, had acquired the knowledge necessary to meet the needs of blind patients.
- 3. The Hospital has requested in-service training for other staff members who did not participate in the original sessions, and desires an ongoing specialized program for blind patients and residents.

Conclusions

- ☐ 1. Volunteers should not be included in this type of in-service training; they should have their own training on a less involved level than staff's.
- 2. In-service training is most valuable for the staff and should be conducted on an on-going basis.
- 3. The workshop seemed to cover the subjects about which information was needed most by the staff; however, there was restlessness during the session on medical eye care which included a good deal of medical terminology. They seemed more interested in information that related to the practical aspects of the subject, that is, how blindness really affects a person's reaction to his environment.
- 4. A follow-up through a questionnaire which would bring into focus the attitudes of staff toward blind persons and their ability to help them should be made about six months after a workshop.

Recommendations

- ☐ Following the workshop, the following informal guidelines for developing and conducting a workshop for the staff of nursing homes and hospitals for elderly persons who are visually handicapped were drawn up:

How to Develop and Run Workshop

I. Planning

A request for staff training must come from the administration of the hospital or nursing home. Usually, such institutions have blind or near-blind residents and realize that the staff must have specific knowledge about the needs of blind persons to meet these needs. The alert administrator is interested in providing in-service training so that his staff is better prepared to work with visually impaired persons.

Planning conferences, with the institution administration, especially the person who initiated the request, and the coordinator from the agency serving blind persons, must be held. Both the institution and the specialized agency must provide a variety of information and data at these conferences.

The information the institution should provide is:

Information needed from hospital

1. Its total resident population.
2. The number of blind and visually impaired residents.
3. Where the blind persons are located (i.e., hospital or home section).
4. Whether the blind residents function independently or are kept in bed with their personal needs met by staff.
5. The general health of the visually impaired residents.
6. The institution's intake policies concerning the admittance of blind or visually impaired persons.
7. The professional disciplines represented on the institution's staff.
8. The institution's ability to finance an in-service training workshop.
9. The layout of the institution's facilities, including the location of rooms, ramps, steps, etc. the blind person would be expected to use.
10. Is the resident expected to procure his own meals cafeteria-style or is he served at a table?
11. How does the bed-ridden blind person manage food on a tray?
12. Is it possible for the blind person to move about comparatively freely in other areas such as recreation, and occupational and physical therapy sections.

The specialized agency should come to the planning conference with the following information:

Information to be provided by agency

1. Specific information on the faculty necessary to teach such a workshop.
2. The expenses that would have to be met by the institution.
3. The kind of instruction that will be provided.
4. The equipment and facilities needed for the workshop.
5. The length of time needed for the workshop.
6. What the institution can expect their staff to be able to do after the in-service training.

After all of the necessary information has been discussed by the institution and the agency, they should, together, decide upon the specific details necessary to arrange the workshop:

Agreements on specifics

1. The workshop dates.
2. The number of days the workshop will run.
3. Each day's starting and closing time.
4. The staff to be selected for the training.
5. The equipment and facilities needed and who will provide them.
6. Financial arrangements for instructors brought in.
7. The publication of proceedings or reports of the workshop.

All such agreements should be in writing. Copies should be sent to persons in both agency and institution so that there will be no misunderstandings. Above all, the roles of the agency and the hospital or home must be clarified. The agency should coordinate the workshop, select the instructors, choose the equipment used, and pick the facilities needed. The hospital should finance the workshop, participate in selecting the personnel to be trained, make provision for facilities and provide the needed equipment, including the case records needed for discussion.

Agreements should be in writing

II. Conducting the Workshop

Instructors should be chosen from the following areas: ophthalmology; medical social work with stress on knowledge of the social implications of eye diseases; personal adjustment; orientation and mobility; and social casework with emphasis on behavioral information and the dynamics of blindness.

☐ The areas to be covered in the first general session are:

First General Session

- 1. How the eye functions.
- 2. The pathology of the eye, including the most common eye diseases among the aging.
- 3. Misconceptions about blindness.
- 4. The social implications of severe visual impairment.
- 5. The historical perspective, including discussion of attitudes toward blindness in both the past and present.
- 6. An overview of the workshop describing clearly the purpose and the scope of the training.
- 7. Introduction of the instructors.

☐ Orientation and mobility and personal adjustment should be taught in the smaller demonstration sessions. The session on orientation and mobility should include:

Demonstration Sessions

- 1. Teaching staff how to orient a blind person to his immediate surroundings.
- 2. Helping the blind person learn basic techniques of protecting himself.
- 3. Helping the blind person to learn how to travel to the areas of the institution it is necessary for him to go to—such as the dining room, therapy room, recreation room, etc.
- 4. Staff must be taught the step-by-step process for helping a blind individual to walk around in his immediate environment, how to walk from bed to bathroom, how to find the closet, and how to find other essential area.

Orientation and mobility

The session on personal adjustment should cover:

Personal adjustment

- 1. A basic understanding of the impact of blindness on the individual and how important it is for him to learn to be as independent as he possibly can.

(Continued on page 91.)

The Effects Modes of Oral Presentation Have on Certain Cognitive Skills

GEORGE V. GORE III

A majority of the visually handicapped students in the United States are educated in local public schools along with sighted students. Braille and large print reading rates are only 40 percent as efficient, and listening to recorded material at normal speed is only 70 percent as efficient, as print reading. The increasing amount of supplemental and collateral reading required in the school curriculum puts an additional burden on the visually handicapped student since his modes of reading require so much more time than that needed by the sighted student to cover the same amount of material.

In a previous investigation, the author tried to eliminate the time handicap for visually handicapped students by having them listen to recorded material which had been compressed or accelerated to a 57 percent increase over the original time. The two modes of recorded speech, compression and acceleration, were compared with the results obtained from comprehension and recall tests given to the blind students. In addition, both modes of speeded recorded speech were compared with normal speed. The compressed mode and the normal mode of presentation were significantly superior to the accelerated mode for both comprehension and recall. There was no significant difference between the compressed mode and the normal mode for either comprehension or recall, although there was a shift from the average mean score for comprehension favoring the normal mode to the average mean score for recall favoring the compressed mode. Since individual test scores were not uniformly consistent, the writer felt that further investigation was necessary. He theorized that cognitive listening skills such as plain sense comprehension, interpretation, and evaluation and application, may be affected according to the mode of oral presentation being used.

Tables I-III show the results of a statistical analysis of the data. Plain sense comprehension comprised 35 percent of the test material used, interpretation comprised 40 percent, and evaluation and application 25 percent. The results in Table I show a relative consistency of mean scores favoring the compressed method of presenting recorded material over the accelerated method. However, although the total scores for both comprehension and recall were significant in favor of compression, the third category, evaluation and application, showed no significant differences favoring either mode for either comprehension or recall.

This paper has been adapted from the final report of a Columbia University Teachers College Research and Demonstration Center for the Education of the Handicapped project. The project was supported by a grant from the Office of Education, U.S. Department of Health, Education, and Welfare.

Compression superior to acceleration

	Total (Converted Scores)	Plain Sense Comprehension**	Interpretation**	Evaluation, Application**
Compre- hension	$\bar{D} = 10.75$ $s_d = 13.02$ $t_{15} = 3.298^*$	$\bar{D} = .147$ $s_d = .17$ $t_{15} = 3.458^*$	$\bar{D} = .114$ $s_d = .123$ $t_{15} = 3.707^*$	$\bar{D} = .0575$ $s_d = .175$ $t_{15} = 1.316$
Recall	$\bar{D} = 8.40$ $s_d = 11.06$ $t_{14} = 2.938^*$	$\bar{D} = .153$ $s_d = .152$ $t_{14} = 3.895^*$	$\bar{D} = .0833$ $s_d = .142$ $t_{14} = 2.270^*$	$\bar{D} = .0307$ $s_d = .176$ $t_{14} = .6750$

** Adjusted Decimal Scores

$$t_{15}; .95 = 1.753$$

$$t_{14}; .95 = 1.761$$

TABLE I
Mean Differences, Standard Deviation
of Difference and t-Tests,
Accelerated Vs. Compressed
(*Significant at Alpha = .05)

	Total (Converted Scores)	Plain Sense Comprehension**	Interpretation**	Evaluation, Application**
Compre- hension	$\bar{D} = 3.0$ $s_d = 9.46$ $t_7 = .897$	$\bar{D} = .361$ $s_d = .301$ $t_7 = 3.392^*$	$\bar{D} = -.22$ $s_d = .205$ $t_7 = -3.0348^*$	$\bar{D} = -.014$ $s_d = .217$ $t_7 = -0.1824$
Recall	$\bar{D} = -1.5$ $s_d = 11.82$ $t_7 = -.359$	$\bar{D} = .089$ $s_d = .297$ $t_7 = 0.8474$	$\bar{D} = -.149$ $s_d = .278$ $t_7 = -1.5157$	$\bar{D} = .075$ $s_d = .352$ $t_7 = 0.6025$

** Adjusted Decimal Scores

$$t_7; .95 = 1.895$$

TABLE II
Mean Differences, Standard Deviation
of Difference and t-Tests
Compressed Vs. Normal
(*Significant at Alpha = .05)

When reading Table II, one finds that although there were no significant differences between the modes of recorded speech presented, compressed and normal, for either comprehension or recall in the total scores, significant differences appeared in the skill areas of plain sense comprehension and in interpretation on the comprehension level. The results on the plain sense comprehension for comprehension were significant in favor of the normal mode of recorded oral presentation. The results for interpretation on the comprehension were significant in favor of compression. There were no other statistically significant findings comparing the two modes of recorded oral presentation of compression and normal speed.

An investigation of the data found in Table III indicates that more students will achieve higher mean scores for comprehension in all three skill

	Total (Converted Scores)	Plain Sense Comprehension**	Interpretation**	Evaluation, Application**
Compre- hension	$\bar{D} = 16.75$ $s_d = 10.61$ $t_7 = 4.468^*$	$\bar{D} = .287$ $s_d = .297$ $t_7 = 2.685^*$	$\bar{D} = .428$ $s_d = .321$ $t_7 = 3.7706^*$	$\bar{D} = .245$ $s_d = .411$ $t_7 = 2.828^*$
Recall	$\bar{D} = 9.86$ $s_d = 11.55$ $t_6 = 2.262^*$	$\bar{D} = .111$ $s_d = .348$ $t_6 = 0.8439$	$\bar{D} = .277$ $s_d = .334$ $t_6 = 2.2273^*$	$\bar{D} = .189$ $s_d = .348$ $t_6 = 1.4370$

** Adjusted Decimal Scores

$$t_7; .95 = 1.895$$

$$t_6; .95 = 1.943$$

TABLE III
Mean Differences, Standard Deviation
of Difference and t-Tests
Accelerated Vs. Normal
(*Significant at Alpha = .05)

areas of listening when they are presented with the normal speed mode of listening than they will with the accelerated mode of listening. The data for recall in Table III show the skill area of interpretation to be the only one yielding significant results favoring the normal mode of oral presentation.

□ Several conclusions can be drawn from an analysis of the data found in the above tables: there are some significant differences in comprehension and recall scores among the modes of oral recorded presentation and these differences depend upon the listening skill being examined. Both the compressed and normal modes of oral presentation show significant superiority to the accelerated mode when the interpretation skill area of listening was being measured. It can be seen in Table III that this difference was so great favoring the normal mode of oral presentation that the total score favoring the normal method became significant over the use of the accelerated method. It would appear, from an examination of the recall columns, that a 55 percent increase in material output through the use of the compressed method would not yield significantly different results from those obtained through the use of the normal method of presenting recorded oral material. Indeed, it may be that material heavily weighted toward the use of the interpretative skill process would yield better results with the use of the compressed mode. When compression is measured against normal in the skill area of plain sense comprehension for comprehension, the results are significant favoring the normal method. However, when testing for recall we find this difference between the two modes no longer remains significant.

It is unfortunate that the present state of the art for producing speech compression does not allow the individual student to vary the speed of compression. The author feels that, if he were able to do so, the results of measuring comprehension and recall might become more meaningful.

The author recommends the carrying out of an experiment using a lower speed for compression and acceleration. He also recommends an investigation of the possibility of producing or adapting present equipment which will allow the individual student to vary his aural speed without introducing a pitch distortion.

Conclusions

Research on Criteria for Measuring Mobility Readiness—Continued from page 80.

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The Blind in the Age of Science

While so far the United States has taken the leadership in the space program, it is evident that the Americans are thinking in terms far more universal than their own country. This was manifest from the first words spoken on the moon. When Neil Armstrong descended the ladder from the lunar module and stepped onto the surface of the moon itself, he said, "One small step for man, one giant leap for mankind." Already, other countries have recognized the significance of this universal thinking and have indicated readiness to cooperate in the further conquest of space.

It is interesting to compare the landing on the moon with the landings on new continents in the 15th and 18th centuries. These early explorers had no knowledge whatsoever of what lay across the sea. They set forth in small, crudely built ships, poorly provisioned and equipped for the stormy crossings before them. While, at first, only the bravest of seamen made the trips, the development of the newly discovered lands had a surprising effect on the rest of the world. The idea of the newly discovered continents was exciting. It brought to the citizens of the Old World something to think about outside themselves. It provided the hope of a new life and high adventure. It brought an impetus to the economy.

□ I predict that the moon probe, the move toward Mars; and all that lies ahead, will quicken the pace of life for all of us. Space research offers a goal toward which all countries can contribute to the limits of their resources and, hopefully, for the first time gives all men a united objective. It should accelerate scientific advancement and economic progress the world over.

Perhaps you are wondering, "Where does the blind person fit into this picture?" He cannot be an astronaut and his chances of being physically involved in space travel are indeed slight. This may be true, but in my view the scientific developments of today, heightened by space research, will have many by-products and more and more of these will have applications to the problems of blindness.

□ May I quote an example. All of you, no doubt, have read from time to time obscure news reports about the development of an instrument that would bypass the eyes and bring light into the visual center of the brain. However, it was only this year that the visual prosthesis (as the device is called) was explained in detail at the American Association of Workers for the Blind Conference. Dr. Edward F. MacNichol, Jr., Director of the National Institutes of Health explained in detail the progress made to date in bringing a visual ob-

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Mr. Magill is managing director of the Canadian National Institute for the Blind.

What the Landing on the Moon Means

Where the Blind Person Fits into the Picture

This article has been adapted from the author's keynote speech before the Fourth General Assembly of the World Council for the Welfare of the Blind in October 1969 in New Delhi.

ject to the totally blind. Dr. MacNichol was careful to say that the prosthesis was still in the pilot stage and that there would be no attempt, as in the case of heart transplantation, to rush into general service. From his comments it was obvious that the moon probe was already motivating Dr. MacNichol and his colleagues (the first walk on the moon had taken place on the first day of the Conference.—ed.'s note). "We now know the technique to put a man on the moon and bring him back safely," Dr. MacNichol said, "but this same scientific knowledge and know how has not been applied to help develop a seeing prosthesis for blind people and as yet there have been few scientific developments for the mobility of the blind with the exception of the long, white cane."

The computer is a further demonstration of the application of science to work for the blind. The training and placement of blind computer programmers is now not uncommon in industrialized nations. The computer is also being used to print braille and it will soon be general practice to print braille books by computer with lightening rapidity.

□ There is one phase of this development where the World Council for the Welfare of the Blind is performing a great service for the blind persons of the world. Before I explain this service, I must first explain the need. In Canada, the Canadian National Institute for the Blind is making continuous grants to finance the development of the Lexiphone, a device that translates the printed page into sound and reports the letters in terms of tonal beeps. A similar machine is being developed at Stanford University in the United States. A few years ago, an electronic guiding device was designed in England. A short time later, the Americans produced the laser cane. Each nation seems to perform its own research and produce its own aids for the blind as best it can. The time has long past for such isolated research. Why waste priceless talent and facilities on duplicating research? Just as the major nations will now begin to work together on space projects, so should they join forces on blindness, provided they receive the necessary leadership and guidance—a contribution the World Council can make.

□ In the midst of this progress, there is a serious question. Most of the research going on today will go into production tomorrow—tomorrow in the sense of five or ten years from now. The visual prosthesis, the sound print reader, computerized braille, and the numerous electronic instruments now on the planning board, still require considerable development before you and I can hold a small box to our heads and see something. Between today's prototype and tomorrow's finished, useful product lie several years. How are we to serve the blind between now and then?

It has been my experience that specialists in our field are almost overwhelmed by the vast numbers of blind persons requiring services. They view any action as useless, with the result that often no action is taken. These experts will see the new developments on the horizon and say, "If a prosthesis that will provide sight is that close, why start a rehabilitation program at all?" There are many blind persons who will not live to read computerized braille but whose lives would be more satisfying and useful if they received the basic re-

Visual prostheses

Computers

How the WCWB Can Contribute

But What About the Present?

habilitation services. These programs cannot be postponed. The needs of the present generation must be met while we are waiting for the other developments.

Now for the final word—and it is a warning. With the emphasis on rocketry, the space age, and the new sciences, we should not forget the most important factor of all—the human factor. We are turning over to machines more and more of our personal prerogatives. In business, the computer is working in the field of decision-making. In the school, programmed teaching is reducing the teacher's role. These influences are also present in work for the blind and we are in danger of losing sight of the dignity of the human being. All of us attending this Assembly are deeply committed to developing efficient and realistic services for the blind and utilizing modern technology in the prevention of blindness. Although we may become entranced with the latest equipment and research, we should always be conscious of the individuality and personal dignity of those we are attempting to serve. Gadgetry cannot become an end in itself and men should not be patterned to fit its demands. As long as we keep this principle in mind, the conquest of space has a rich storehouse of scientific tools for the betterment of both blind and sighted persons.

Personal dignity and the human factor

Guidelines for Providing In-Service Training—Continued from page 85.

- 2. The necessity to encourage the blind resident to bathe himself, find his food on the tray so that he can feed himself, how to dress himself, how to handle his attitudes toward himself and others, how to ask for help when needed, and how to accept help when offered.
 - 3. Information about the special aids and appliances available for blind persons, many of which would be helpful in recreation and other activities.
 - ☐ The staff should also be helped to cope with their own attitudes toward blindness. They should be aware of the attitudes and defense mechanisms used by blind persons, and that each individual reacts differently depending upon his personality. They should be provided with information about referring persons for psychological help and about the services of specialized agencies for the blind. Other resources available to blind persons should also be discussed with staff so that they can be called upon if the need arises.
- A final general session should be held to summarize the important points and to provide any additional information needed.

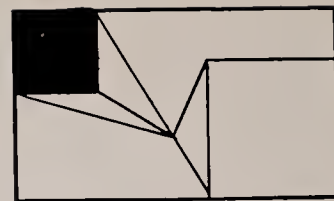
Staff's Attitudes About Blindness

III. Follow-up

A follow-up, to determine the validity and usefulness of the workshop should be planned. It should be organized so that it will establish whether the staff found the information useful and was able to carry out the techniques learned.

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Dear Editor:

I have just read "Concerning Certification of Orientation and Mobility Specialists" by James A. Kimbrough. (*New Outlook*, November 1969) His article is very well-thought out and smoothly written. However, I feel it did contain contradictions and untenable conclusions.

Three basic hypotheses are mentioned and are the basic tenets of this position paper. These are:

1. That the Greater Pittsburgh Guild for the Blind's in-service training program is comparable to the discontinued pre-professional in-service training program at the Hines Veterans Administration Hospital.

2. That the graduate level preparation leading to a master's degree related to the field of orientation and mobility is an unrealistic standard.

3. That the three "training" programs (a professional program leading to a master's degree with a specialization in orientation and mobility; undergraduate degree with an interest in orientation and mobility; an in-service training program conducted by an independent agency) are comparable and produce equally qualified personnel. It is these three hypotheses that I find untenable.

Mr. Kimbrough relates that early orientation and mobility workers came from various backgrounds, different educational levels, and had a variety of experiences. He assumes that these people had an ability to relate to people on an interpersonal basis and stressed this point when he mentioned the early trainers concerned with both the dog and cane. I am sure that these basic assumptions would still be valid today in any interpersonal field both on a sub-professional and a professional level.

Let us now examine Mr. Kimbrough's

first and second hypotheses: 1) the quasi-comparability of the Greater Pittsburgh Guild for the Blind's in-service training program with the Hines VA Hospital's in-service training program; and 2) the graduate degree as related to the field of orientation and mobility. Mr. Kimbrough attempts to identify the orientation and mobility in-service training program at Hines, by comparing the differences in background, experience, and education of people initially working in the newly-formed pre-professional in-service orientation and mobility in-training program at Hines. He alludes to the practicality and efficiency of in-service mobility training programs by saying that the Hines program and the Pittsburgh program have the largest mobility staffs in the country. However, he fails to relate that the great majority of the Pittsburgh staff, although given the title and assignment of working on an orientation and mobility staff, are not capable of being certified even under minimal contemporary standards as are the Hines people. He also fails to relate that the Catholic Guild for All the Blind also has a large orientation and mobility staff. This staff has 14 people with graduate degrees in orientation and mobility who are obviously certifiable.

Relationship To Hines Program

Mr. Kimbrough attempts to identify his program with the Hines program. It is obvious that even though one in-service training program might have produced satisfactory personnel, it does not mean that a causal relationship is present and that all other programs do, or are even capable of producing competent personnel. Even if this causal relationship was true, and this is doubtful, it would only

bring the Pittsburgh staff to a parity with the antiquaristic Hines sub-professional standards. In order to examine this point in greater detail, a brief history of the development of the orientation and mobility field and its relationship to the cane is necessary.

A Brief History

In 1943, training centers concerned with rehabilitating the blind were Valley Forge General Hospital and Letterman General Hospital. At Valley Forge some of the first in-service work in training people to work with blinded veterans was initiated. The orientation and mobility personnel were given a two-week program to acquaint them with basic knowledge and to give them experience in the work they were to perform. In 1944, a bulk of this work was transferred to Avon Old Farms Convalescent Hospital. In 1948, Hines initiated its program to habilitate the blinded veteran, and it was there in 1948 that workers were recruited from various fields and given in-service training on a highly organized basis to enable them to work with the blind more effectively. The personnel involved in the Hines program were given more thorough basic training and experience than were their predecessors. Sometimes these training programs lasted five or six months. In 1953, the first mobility conference was held in Gloucester, Massachusetts, to establish standards for instruction in the field.

In 1958, the Office of Vocational Rehabilitation placed the training of orientation and mobility personnel on its priority list of training needs in the field of rehabilitation of the blind. In 1959, the National Conference on Orientation and Mobility, sponsored by the Office of Vocational Re-

habilitation, was held at the American Foundation for the Blind in New York. Well-known and knowledgeable people in the field, experienced in the formative stages of orientation and mobility training and acquainted with administration problems, agreed on the basic principles concerning the training of orientation and mobility people. These principles were that a training program should be on the graduate level and that orientation and mobility personnel should be sighted. These people were fully cognizant of the relatively high competence level of the Hines personnel trained by the in-service method, but they felt that to produce high-level professionals and upgrade the standards for training orientation and mobility personnel, it was absolutely essential that graduate degree professionals be trained if the blind were to receive high-quality instruction.

Throughout his article, Mr. Kimbrough says that he feels the graduate degree in orientation and mobility is an unrealistic standard, e.g. too high, but one must go back to the 1959 conference when leaders in the field of blindness felt that professionalism, e.g., master's degree, was necessary to upgrade orientation and mobility instruction to a professional level.

The various components of the Pittsburgh in-service training program were related at great length and it was claimed that its standards approximated the Hines pre-professional in-service training program instituted over 20 years ago. Because of the nature of the elaboration of the Pittsburgh training "curriculum," one might think that this could possibly evidence the "college catalog syndrome."

Are Different Kinds of Preparation Equivalent?

Mr. Kimbrough's third hypothesis is that the three preparation areas are equivalent and produce similarly qualified personnel, and that these personnel, even though they have different preparation, are equal. It is this hypothesis that Mr. Kimbrough himself proves untenable. He purports to evaluate graduate programs, undergraduate programs, and his

own agency's in-service training program and comes to the conclusion that "... the curricula and quality of learning experiences in all three facilities are nearly identical. . . ." It seems apparent that this purported cursory evaluation is subjective at best and, since he is intimately involved in one of these programs, the question of bias is also raised. In addition, Mr. Kimbrough relates that "... it has been observed that the mobility specialists from the three types of training facilities have been equally qualified and knowledgeable about the performance of their jobs." Again, as in the issue of curricula and learning experiences, his conclusions regarding the performance of the people from the three different training programs was also subjective and biased.

Difference Implied

Throughout the paper, Mr. Kimbrough attempted to equate the various training programs. However, he tacitly admits and thus disproves his own hypothesis, e.g. that the "... mobility specialists from the three training facilities (are) equally qualified and knowledgeable about the performance of their jobs," by suggesting that graduate mobility specialists be employed as coordinators and reiterates the superiority of the graduate level person by saying that the person with a Master's Degree would be "... fully qualified to serve as director or supervisor of a mobility staff. They could also act as consultants to various agencies and their staffs or become part of university faculties." He also calls for a "... move to make a clearer distinction between graduate, undergraduate, and agency programs." Once again, Mr. Kimbrough admits the differences among the three training programs and the superiority of the graduate level professional and by doing this, tacitly admits the inferiority of the undergraduate person and the person "trained" in an in-service program. One simply cannot understand how he can ask for delimiting the three training programs and still maintain that they are equal and produce equally qualified personnel.

Certification Standards

Mr. Kimbrough again relates that requiring standards for certification involving only a graduate level degree is setting an unrealistic standard. Again, the issue of the 1959 conference is raised. This conference showed foresight by establishing two criteria around which mobility training programs could center, these criteria being, the graduate degree and sight of the instructors. These criteria were quite revolutionary, forward-looking, and precipitated the beginning of the profession. This professionalism was precipitated by requiring minimal high educational standards that one expects of true professionals.

Mr. Kimbrough also relates that the orientation and mobility field itself attempts to scare administrators by relating "... the profession's past experience with unqualified instructors, haphazard training, and similar unprofessional attempts at providing the service of mobility." I have been involved in the field of orientation and mobility for several years and I have seen a number of instructors who were given "in-service training" who have provided and continue to provide safe, sub-standard, instruction to clients that I have observed and subsequently worked with. In fact, this type of instruction still persists and hopefully, certification will eliminate and prevent this sub-standard and unsafe instruction. It is only by setting and maintaining high standards that sub-standard and unsafe instruction will be eliminated.

Improvement Over the Years

Throughout the history of training personnel in the field of orientation and mobility, from Valley Forge, to Avon, to Hines, to the high-level professional standards of the graduate degree person, constant improvement was attempted. The early staffs received special in-service training in orientation and mobility, and although some of these programs, which we admit, were good programs and brought to the

field people who were selected and given some training, we must return to the conference of 1959 which set the needed high standards for professional orientation and mobility instructors. Needed upgrading of programs and personnel was accomplished over a long period of time by successive approximations in the upgrading (raising) of standards.

Mr. Kimbrough feels that it is not easy to change things and says it might be easier to follow tradition than establish what he calls unrealistic standards, but he does not want to admit that tradition was

changed in a very forward-looking manner in 1959 when the standards for high-level professionals in the field were set. I feel that as a professional in a field that has come so far so rapidly, the field should not re-institute unstandardized in-service training programs, for this would set us back to the standards of 1948, before graduate high-level professionals were thought of.

Our field has grown tremendously and has matured even though the profession is less than a decade old. We have had growing pains and made mistakes as all

new professions have, and, as humans, might continue to do so. As we have matured as a profession, however, we have attempted and succeeded in greatly reducing errors. We must continue to reduce our errors and go forward as highly trained and skilled professionals and we must not allow the field to be diluted and set back to the standards of over two decades ago. We must do so, not to give fodder to our egos, but for the good of these we serve.

David L. McGowan

News in Brief



■ John L. Naler has been appointed executive director of the American Association of Workers for the Blind, replacing Fred Dechowitz who resigned.

Mr. Naler has been on the AAWB staff for more than a year and a half where he devoted much of his time to AAWB regionalization.

■ The Missouri chapter of the American Association of Workers for the Blind was formed in St. Louis on November 14, 1969. The following officers were elected: Lawrence B. Hapeman, president; Elva Hayes, 1st vice president; William E. Steinbrueck, 2nd vice president; Gretchen Vanderschmidt, secretary; Robert D. Leighninger, treasurer. The representative to the AAWB board is Juanita C. Evans.

■ *Music and the Physically Handicapped*, a British report on the problems of home and hospital delivery service for records and tapes is available for 5s. (60¢) from the Disabled Activities Group of the Central Council for the Disabled, Vincent Square, London, S. W. 1., England.

■ The first National Accreditation Council Awards for distinguished leadership in raising standards of service to blind and visually handicapped people, are being given to Mary E. Switzer, former administrator of the Social and Rehabilitation Service of the U. S. Department of Health, Education, and Welfare, and Jansen Noyes, Jr., president of the American Foundation for the Blind.

The awards will be presented to Miss Switzer and Mr. Noyes at the NAC annual meeting in Chicago on April 24, 1970.

■ According to Joseph E. Alfano, M.D., an associate professor of ophthalmology at Northwestern University, several cases of retrolental fibroplasia (RLF) have developed in infants who have received oxygen in concentrations within the so-called safe limits of between 20 percent and 40 percent. Dr. Alfano explains that the retinal vessels of some infants have a greater sensitivity to oxygen than others. The administration of oxygen should only be used, he goes on, for cyanosis and respiratory distress, and then only in the lowest concentration compatible with relief.

■ *Large Type Books in Print*, a complete finding and ordering guide to enlarged format books, is being published by the R. R. Bowker Company. The price is \$10 net in the United States and Canada, \$11 elsewhere.

For more information and copies of a brochure that describes the publication in more detail, write R. R. Bowker Company, 1180 Avenue of the Americas, New York, N.Y. 10036.

■ New officers of the National Council of State Agencies for the Blind are: Joseph Kohn, president; Burt Risley, president-elect; Lyman D'Andrea, secretary; L. H. Autry, Jr., treasurer; and Jim Carballo and Howard Jones, board of directors.

■ Eye specialists from Johns Hopkins and Baylor universities recently advised that surgery for infants with congenital cataracts, including those due to rubella, should not be delayed, as was formerly thought. It has been discovered that any delay decreases the likelihood of good postoperative vision. Immediate surgery and the provision of optical correction (contact lenses) can prevent an irreversible deprivation of form vision in these children.

■ The University of Wisconsin's Sheltered Work Program will hold a six week, six credit session in Europe this Summer. The summer session dates are June 22 to August 12.

Instructors for this course, Comparative Practices in Sheltered Work, will be members of the Wisconsin faculty and European experts in the rehabilitation field. To supplement lectures, visits will be made to rehabilitation facilities in Sweden and Holland.

For more information, write Dr. Paul Lustig, director, Sheltered Work Program (SSE), University of Wisconsin, 415 West Gilman Street, Madison, Wisconsin 53706.

■ The Maryland School for the Blind, which was accredited by the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped last June, has just been accredited by the Commission on Secondary Schools of the Middle States Association of Colleges and Secondary Schools.

■ The 1970 *Tax Guide for Small Business*, prepared by the Internal Revenue Service, is available on magnetic tape from the National Collections, Division for the Blind and Physically Handicapped, Washington, D. C. 20542.

This is a comprehensive, easily understandable booklet that explains such things as how income, excise, social security, and withholding taxes apply to sole proprietorships, partnerships, and corporations, and the tax factors involved in starting, operating, and disposing of business.

■ James J. Acton has been appointed administrator of the St. Raphael's Geriatric Adjustment Center of the Catholic Guild for All the Blind, Newton, Massachusetts. He replaces Anne Brennan, who is on leave of absence.

Mr. Acton who joined the Guild staff in 1965, had previously been a peripatologist at the New York Association for the Blind. He received a master of education degree in peripatology from Boston College in 1963.

■ The Hadley School for the Blind is now accepting students for a new course called "First Aid Without Fear." This 14-lesson course, available in braille and on tape, is the first ever designed specifically to teach first aid by mail to blind students.

Dr. Irwin M. Siegel, chief of the Department of Orthopaedic Surgery in the Strauss Surgical Group at Weiss Memorial Hospital, Chicago, wrote the course.

For more information, write the Registrar, Hadley School for the Blind, 700 Elm Street, Winnetka, Illinois 60093. The course is free to all blind persons.

■ "Ophthalmic Careers," a new film for teenagers career opportunities in the ophthalmic field, is available from Halewyn Films Ltd. For more information, write Halewyn Films Ltd., 7 King Street West, Toronto 105, Ontario, Canada.

■ The American Foundation for the Blind has recently announced the appointment of two new staff members.

Arthur Zigouras has been appointed director of the public education division, replacing William Greene who resigned.

Most recently, Mr. Zigouras served as radio/tv film supervisor for the National Foundation-March of Dimes. Prior to that he was director of the radio/tv film department for the Muscular Dystrophy Association.

Jessamine Cobb has joined the AFB as regional consultant in the midwestern regional office in Chicago.

For the past two years she has been a program consultant at the National Easter Seal Society for Crippled Children and Adults. She received a B.A. degree from Rockford College and an M.S. from the Columbia University School of Social work.

Coming Events

March 22-26 American Personnel and Guidance Association, New Orleans.

April 12-18 National Library Week

April 19-25 Council for Exceptional Children, 48th Annual International Convention, Chicago.

April 24 National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Annual Meeting, Chicago

April 24-25 President's Committee on Employment of the Handicapped, Annual Meeting, Washington, D.C.

May 3-8 American Nurses Association, Miami.

May 31-June 4 National Conference on Social Welfare, Annual Meeting, Chicago.

June 1-5 World Federation of Occupational Therapists, Fifth International Congress, Zurich, Switzerland.

June 7-11 Special Libraries Association, Detroit.

June 27-July 2 Association for Education of the Visually Handicapped, New Orleans.

June 28-July 3 American Physical Therapy Association, Washington, D.C.

June 29-July 17 Movement in Education: A Symposium Illuminating the Role of Movement in the Education of the Normal and of the Atypical Child, conducted by Bryant J. Cratty, Ed.D., at La Verne College, La Verne, California.

July 22-24 American Association of Workers for the Blind, Southwest Regional Meeting, Little Rock.

August 17-21 International Congress on Education of the Deaf, Stockholm, Sweden.

September 24-27 American Association of Workers for the Blind, Western Regional Meeting, Los Angeles (place and dates tentative).

October 5-9 American Academy of Ophthalmology and Otolaryngology, Las Vegas.

November 7-13 American Occupational Therapy Association, New York City.

Sensi-Quik

The Touch Cane for Walking
Faster with Safety



Sensi-Quik's contour handle arranges the fingers for quick down-touching and accurate, rhythmic side motion with thumb and finger, minimizing wrist action. The nub at the handle's elbow rides in the crotch of thumb and forefinger, providing purchase for fingers when the hand perspires or when it rains. The tapered-off end reduces "tripping hazard" on crowded sidewalks.

Made of flexible fiberglass, tipped with diamond-hard tungsten carbide, the Sensi-Quik touch cane gives the traveler a sharp signal and alerts other pedestrians to his approach.

The cane's working tip, a carbide disk one-half inch in diameter, gives the user a special advantage in the subway. As he moves across the loading platform toward the train, the carbide tip glides easily over the rough concrete surface, giving off a "rippling" sound. Other riders, alerted by this sound to the traveler's approach, are more likely to help him get aboard.

The carbide tip, originally developed in 1956 for the bamboo model of the Sensi-Quik, is now available for the fiberglass model, which was introduced in 1965 and has been continuously improved ever since. The shaft of the fiberglass cane is tubular in construction, giving adequate strength within necessary restrictions in weight.

The fiberglass model comes with either crook or contour handle and either carbide or replacement steel tip. The bamboo model, still available to those who prefer it, comes with polished wood crook handle and carbide tip.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact

Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

Mr. Franklin S. Clark
The Go-Sees
166 East 92nd Street
New York, N.Y. 10028

THE NEW Outlook FOR THE BLIND

April 1970 Volume 64 Number 4

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The Establishment of State-Wide Volunteer Services in Oregon

The Oregon Commission for the Blind is a relatively small State agency with only one office, situated in Portland, convenient to the greatest population, but far from many areas of the state it serves. Volunteer Services was developed with the hope that it could fill some of the needs that our limited staff was unable to meet.

Such a state-wide program was a new idea, and as far as we could determine, there was no precedent that would help to guide us in our organization. A number of facts had to be considered and much had to be learned by objective investigation. However, we developed a practical, beneficial program that proved to be much more successful than we at first imagined it could be. These are some of the factors involved and the steps we went through in establishing Volunteer Services.

□ Many of the immediate personal needs a general population of blind clients needs done for them are tasks that a professional person cannot, and in many cases should not, perform regularly. Such things as reading mail, shopping assistance, transportation, home and telephone visiting, or going for a walk can best be performed by community members. Beyond these ever-present needs are a vast number of services and activities ranging from social and recreational outlets to private tutoring and specialized training. Many of these tasks fall under agency social services or vocational rehabilitation programs, but when a staff is so limited in numbers and geographic location, these services must somehow be supplemented.

In many cases, the visually handicapped person has all of his basic needs filled within his family or congenial neighborhood structure. But what about those clients, particularly in the older age groups, who have neither family nor close friends to look after them? Or those who are so dependent upon their families that they see little of the outside world? Or the newly blinded with a desperate need to find an identity as similar to the one they left behind as possible? Here Volunteer Services can help.

Beyond being available to fulfill a vast number of immediate personal needs, volunteers have several assets. In many cases the community volunteer can go farther than a professional worker since his help does not depend on time limits, availability of funds, or regulations. The volunteer, as a member of the community, is more sensitive to the problems and attitudes of that community, and is often in a better position to find a workable solution. Also, an unpaid volunteer is sometimes more readily accepted than out-of-town agency personnel, especially if the volunteer is known in the area.

It is believed then, that within each community, there exists the resources to fill many of the needs of the blind population of that community if only they are properly harnessed.

E. ELAINE EASTMAN

Miss Eastman is supervisor of volunteer services, Oregon Commission for the Blind, Portland.

Agencies Cannot and Should Not Fill Every Need

Family and neighbors fill only basic needs

*Volunteers can provide valuable
supplemental services*

□ Once the need for such community volunteer service has been established, one additional point should be considered. In providing for blind and visually handicapped clients, are we mainly concerned with the fulfillment of immediate needs, or should our primary concern be toward the long-range effects of such a program?

Since the purpose of our agency is the best general interest of the clients, our main concern is rehabilitation. Rehabilitation centers around the person's need to resume as normal a life as possible, including a job, family, home, and community life. Our ultimate goal, then, is to assist these people in becoming involved in their community—not as its ward, but as a responsible participant—and, whenever possible, in becoming as independent and self-sufficient as ability will allow, in regaining as many skills and social interests as are practical.

In planning an ideal program, we must acknowledge that there will always be a significant number of persons, especially in the older age group, who will never become integrated into sighted activities. Even when the general population is examined, there is a cross-section of highly dependent persons in every society. For them, our best service is the fulfillment of immediate needs. However, their presence should not alter the general aim of volunteer activities—that of rehabilitation. Often their exposure to more capable, well-adjusted blind persons will allow them to go a step farther along the road to rehabilitation than would otherwise be possible.

Oregon itself presents special problems. There is a wide variety of climates and terrain: rugged coast, seaports, heavy rain forests, rich farm and dairy country, high mountains, deserts, and arid ranch land. And every area, whether a plains community or logging settlement, has its own unique social and political structure. To be successful, a program must fit easily into the community structure. General operation patterns are not good enough. Each volunteer organization must be tailor-made.

□ In order to tailor-make a program, we went to the community for basic information. What were their major industries? Their employment interests? Their social and political structure? What restrictions did their climate place upon their activities? What benefits? What did individual members do with their spare time? What recreational facilities were available? What organizations were established? How active were their members? How much demand was placed on willing community volunteers? What were their service needs?

It is very difficult for one, or even a dozen outsiders to go into an area and find the answers to all of these questions. Instead, we sought out well-informed community members and enlisted their assistance from the very beginning in developing a community's program.

It soon became apparent, once the program began, that an agency staff member living and working in a different community could not keep track of the needs and problems that would constantly be arising. So, one of these well-informed community members was given the responsibility of "volunteer, volunteer coordinator." Since this person helped in the initial program development and planning, and had experienced the problems as well as the

The Focus of a Community Volunteer Service

Some will always be dependent

Communities Analyzed Individually

Community members utilized from the outset

positive points, he or she was a much better leader, more determined to make Volunteer Services work in his town, and had a greater interest in those being served. Once a new program was organized and on its feet, this person became the chairman for local volunteers.

□ In most cases the coordinator was a housewife, usually involved and experienced in other community activities and quite often with a large family of her own. Yet these were the people who could do the job best. The coordinator became a source of contact for both the community volunteers and the visually handicapped, a person who could be called when help was needed or offered. This also made agency supervision much easier, since constant communication could take place between the supervisor and the coordinator, where it would be very difficult among a large corps of volunteers. The coordinator became the person responsible for the submission of records and service logs. She, as a community member, was constantly in a position to recruit new volunteers and to aid in the public education so necessary for community acceptance. These people became an integral and invaluable part of a state-wide Volunteer Service program.

Since each program is tailored to the specifications and needs of an individual community, there are as many different patterns of development as there are programs involved. A year and a half after Volunteer Services was formed, there were volunteer organizations in 12 areas of the state, with individual service provided in several more. Some of these groups have existed on a small scale for four or five years as a result of craft workshops started by home teachers. But their scope and supervision was limited. Of this 12, some are strictly special interest groups at this point—craft workshops or recreational programs—because this is where the community need arose. Some have the basic beginnings of a broad spectrum organization, providing social and recreational activities, workshops, transportation, and a wide variety of personal assistance. The smaller groups work only in their immediate communities while others, particularly those with a variety of services, cover a whole county or tri-county area.

□ Though the central Oregon area is not typical in terms of its geography or small population, it is a good example of the development of a successful Volunteer Service program in a place where there was no organization among the blind or group service by public or private agencies. The only service these people were receiving was on an individual basis through counselors and field representatives from the Oregon Commission for the Blind, nearly 200 miles away, and from social workers from the Department of Welfare and other agencies. Even then, only a limited number of clients were actively receiving help and these on an irregular basis.

The area involved encompasses three counties and over 12,000 square miles. About 60 clients were registered with the Commission in this area. There were no chapters of the Oregon Council of the Blind and most legally blind residents were not aware of other people with visual handicaps in their community. The public, too, was generally unaware that blind people were living in "their town." Those few blind persons who were known were

The Community Volunteer Coordinator

Programs of many different patterns have developed

An Example in Central Oregon

usually people owning a guide dog or those successfully employed in a public place; and there was only a handful of these.

The majority of the 60 people known to us here were senior citizens, many of them suffering fairly recent sight losses, with no formal rehabilitation and few skills as a blind person.

An original survey trip was made to the area and Bend, the largest, a fairly centrally located town of about 14,000, was selected as the base of operations. Contacts were made with the Chambers of Commerce and service clubs in the major towns of the three counties to establish interest in doing volunteer work and gain support with the ever-present problem of transportation, especially since distances of 50 to 70 miles would be involved in bringing people to regular programs. The Lions, Elks, and Kiwanis clubs and several church groups all contributed services to help get the program going.

The Bend Recreation Department was approached since it was felt a good outlet for group activities would be social and recreational programs, and since it was to be a community program, the city structure should have a hand in the planning. Several private individuals and community leaders were approached, but no one could be found initially to act as the coordinator. In these circumstances, the Recreation Department volunteered to act in this capacity on a temporary basis until a private individual could take over.

It was decided to organize two regular group activities each month. One was to be a craft workshop taught by one of the home teachers of the adult blind from the Commission, and the second, a social-recreational activity planned according to the interests and abilities of participating visually handicapped persons. It was felt that these group situations would do more than supply a social outlet for the area's blind; but they would act as a starting point to introduce and develop new services within their community; would give agency staff members and volunteers a better idea of the needs, abilities, and interests of the visually handicapped persons we were not familiar with; and would begin the job of arousing public interest and furthering its knowledge of the existence and capabilities of blind persons in their towns.

The last thing we want to create is a sheltered program—whether it is a craft workshop or a social activity. To some degree, however, this is unavoidable. Before any handicapped person can resume his normal place in society, he must learn new skills, or learn new ways to perform old skills. He must develop self-confidence and social awareness, and he must establish a working relationship with the sighted world. The best place to do this is in a somewhat select environment. Just as a child learns to read with large letters and easy words, so, too, must a handicapped person develop his skills in the "big print" of a restricted environment.

To eliminate as much as possible the undesirable sheltered aspects of our group activities, we tried to always have at least one sighted person for each legally blind person present. Besides volunteers, we encouraged family members and friends to attend whenever possible. Volunteers were, and are continually, instructed to assist and teach those with vision problems, but not to wait on them. They were to expect a certain amount of responsibility from

Base of operations in Bend

Two group activities organized

Sheltered aspects of activities unavoidable

Sighted persons were invited

everyone and to encourage people to do for themselves as soon as they were capable. Hopefully, some of the visually handicapped participants would eventually take over some of the leadership and planning responsibilities.

Arrangements were made through the Bend Recreation Department to use a building belonging to the Senior Citizens and get some assistance in paying for the up-coming heat bill.

□ Volunteers were recruited in any way available—through word of mouth, personal contact, church, and organization members. Anyone who might have something to offer and who might be of benefit to the program was invited to attend volunteer orientation-training sessions to be conducted by the supervisor of Volunteer Services from the Commission for the Blind. The newspapers and radio stations were an invaluable help not only in recruiting volunteers, but in presenting feature articles and interviews aimed at informing the public.

It is this good publicity through the news media and the individual volunteers that helped make this program a success. Public education seems to be one of the major keys toward successful integration of the blind and visually handicapped. Old fears and ideas make adaptation to the sighted world difficult if not impossible when the public's emotion is one of pity. Constant education is needed, even in the very smallest community, if these ideas are to be changed and public acceptance is to be gained.

In addition to public announcements, every legally blind person known to the Commission through our register of the three central Oregon counties, was sent a letter of invitation announcing times and places. Personal contacts were also made whenever possible.

□ A day or two before the first workshop, the volunteer training classes were held. Two two-hour sessions during the day covered general information about blindness, abilities, and attitudes; the Commission for the Blind; Volunteer Service programs; the prospective central Oregon program; the use of volunteers and volunteer procedures; and some do's and don'ts in working with blind persons. About an hour of the last session was spent teaching and practicing sighted guide techniques and further practice was assigned at home. A third session for those volunteers interested in crafts was held that evening with the home teacher, and procedures and projects for the craft workshops were discussed.

At the end of the training sessions, a coordinator was also selected from among the volunteers. She was a housewife with a large family who lived on a ranch 20 miles away. The old adage, "When you want something done well, ask a busy person," proved sound, because she made an excellent coordinator and was one of the major reasons for the success of the program.

The amount of volunteer training allowed only the most essential ideas to be briefly covered and much more extensive training programs can and have been set up. But several factors had to be taken into consideration. The 20-some volunteers involved here came from farms and ranches and small town as well as the Bend area. Many of them were housewives with school age children who could not afford several days of their already valuable time.

Recruiting Volunteers

Public education is vital to progress

Volunteer Training Classes

Coordinator selected from volunteers

Sometimes a volunteer can be overtrained when a few basic rules and human instinct would do a better job. Again, remember the major objective of these programs was community involvement and acceptance. Naturalness was the key. What would they do and say, we asked them, with their own sighted friends? What were some of the interests of other people of comparable age and circumstance? Blind persons were no different. Sighted people should not change the conversation to any degree just because a person is blind, although he might appreciate a few more verbal descriptions.

Basic skills and instincts emphasized

Volunteers soon realized that the perfect test of their acceptance of a blind person was the ability to forget he could not see. This sometimes proved awkward when the pair ran into a doorframe, or the sighted partner forgot to read the menu in a restaurant, or held up an unusual object for inspection. But in these instances, the blind person usually felt that he had gained a friend rather than a worker.

Mutual acceptance

Attendance at the regular Central Oregon functions was small at first and those who originally came were generally hesitant and withdrawn. Many came along only out of curiosity but did not feel they could participate because of their sight problems. Usually they were surprised to find there were other people with problems worse than their own, and that even the totally blind teacher found little he could not master.

□ By the end of the year the groups had enlarged and their interests expanded. They began to develop skills and definite social ideas, to express their likes and dislikes, and to take a very active role in the planning. A board consisting of the coordinator, assistant coordinator, treasurer, two visually handicapped representatives, and the Lions Sight Conservation Chairman was established. They gave themselves an organizational name: Central Oregon Fun and Crafts for the Blind.

**"Central Oregon Fun and Crafts
for the Blind"**

Because recreation departments in towns the size of Bend have a very limited budget and staff, it became very difficult for them to assist in the financial costs and to give the program supervision. At this point, sponsorship was taken over very willingly by the Bend Lions Club.

Once the board took hold and a pattern of operation was developed, Volunteer Services in Central Oregon began to function almost independently. It was their community organization, not one sponsored by a distant state agency. We were still there to advise, to train, and to supervise volunteers, and to provide the technical assistance. But they did the work and most of the basic planning.

State Commission only in the background

The volunteers in this area worked with clients as friends and neighbors, often to the point that formal roles were forgotten. They did much more than attend the two monthly group activities. They planned special events like a day-long trip to the fair, or a bazaar to sell crafts and homemade items. They taught each other sewing, canning, and new methods of housekeeping, until often it was not obvious who was the teacher and who was the pupil.

Individual volunteers frequently had particular clients they would work with. They looked after their needs as they arose, visiting them when they were sick, taking them along on shopping trips or visits to mutual friends

Mutual satisfaction

or to contact new visually handicapped persons. They helped them with transportation problems and together they discovered the sighted community. Several times sighted volunteers commented that they really saw the world for the first time through the eyes of a blind person.

Because they were predominantly senior citizens, their social activities were mostly potluck dinners, picnics, or group gatherings where they talked, played some games, and had music or entertainment, often self-provided. But they enjoyed what they did and they did it together.

As another result of the wide community involvement, the Commission was able to register and serve a number of new clients that in the past did not know about the Commission for the Blind or realize that we had services to offer that would benefit them.

□ The actual degree of success of this and the other programs like it, cannot be analyzed in precise terms by tasks accomplished or number of people served. Its greatest successes are small and inobvious; successes in human involvement. So much of this type of work cannot be measured in hours or recorded on a time sheet. When a volunteer program of this general nature really works well, keeping records becomes very difficult. Hundreds of hours are spent in providing many necessary, definable services. But many hundreds more are contributed in the name of friendship.

The volunteers do not have to be sighted community members either. In several places blind clients are now acting as the coordinators and assistant coordinators and many people, both totally blind and partially sighted, are working as volunteers helping to organize and provide services to others.

This type of state-wide, community based-Volunteer Services opens up almost unlimited possibilities. The best aspect of this program is its adaptability to any area, any age group, and any amount of vision. The needs and living patterns of the visually handicapped of Oregon are going to be continually changing, but with this adaptability, Volunteer Services should be able to change with these needs and still continue to grow.

Informal activities predominate

Summary

Approach is highly adaptable

On the Accuracy of Obstacle Detection by the Blind—Part 2

The first part of this article appeared in the March 1970 issue of the *New Outlook*. Part two concludes the article.

At the Rotterdam Mobility Research Conference in 1964, the ultrasonic torch developed by Dr. Leslie Kay of England received more attention than any other aid (Clark, 1965). It may be justified to say that this device, more than any other, raises hopes. It overcomes many of the drawbacks of earlier mobility aids; for example, it does not weigh much. This aid was used in the study reported here. A brief description of the aid follows:

It is a hand held torch, about 25 cm. in length and weighing about 280 gr. Electrical power comes from a dry battery detached from the main unit. The audio output comes from an insert-type earphone held near, but not coupled directly into, the external auditory meatus by a plastic clip hooked around the pinna.

□ The aid operates as follows (Delany and Rennie, 1965): An electret-foil transducer on the front of the unit repetitively transmits pulses of ultrasonic waves, the excitation frequency sweeping uniformly through the range 90,000 to 45,000 c.p.s. during each pulse. The dimensions of the active area of this transducer are such that it produces a highly directional radiation pattern with maximum response along the length axis of the unit. A second transducer with similar directional properties adjacent to the transmitter detects ultrasonic waves reflected or scattered from nearby objects and the resulting electrical signal is amplified and mixed with a signal from the transmitter drive. The ultrasonic signal received back at the instrument, delayed by an interval equal to twice the product of distance of separation of the reflecting object and the local velocity of sound, has a frequency differing from that of the outgoing wave. By suitable choice of frequency sweep rate, the difference between outgoing and returning wave thus produced is arranged to fall within the audio range. With constant rate of change of frequency the audio beat-frequency remains constant and, other conditions constant, is directly proportional to the distance between reflecting object and the transducers.

Two ranges are provided: the near range, useful up to distances of 2 to 3 m., swept from 90,000 to 45,000 c.p.s. in approximately 180 milliseconds. The sequence being repeated approximately five times per second; the alternative range, selected simply by depressing a button-switch and useful up to distances of 6 to 8 m., swept the same frequency range in 0.6 s., recycling after 0.8 s. The output from the device consists of repeated bursts of sound, the frequency depending on the separation between unit and reflecting ob-

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The Operation of the Ultrasonic Aid

Ranges of the aid

ject. The amplitude of the electrical output to the insert earphone can be adjusted with a potentiometer, which also has an on-off switch.

□ The first experiments were exploratory. Little was known about the discriminative acuity in obstacle perception when the study began. In this part, attention is focused on three questions, each pertaining to several specific discrimination variables.

(1) What is the degree of difficulty of the various discriminative performances associated with the obstacle sense?

(2) How are performances affected by learning?

(3) How do performances based on natural functioning of the ear relate to corresponding performances with the help of Dr. Kay's aid?

These problems were investigated by asking subjects to perform the following:

(1) Estimate when a target approaching them was at a given distance.

(2) Report when they first observed that a target, initially immovable and at a given distance from them, was in motion (either toward or away from the subject).

(3) Judge which of a number of alternative materials the target was made.

(4) Estimate whether a target was larger or smaller than a given standard target.

(5) Judge the target's size, distance, and material simultaneously.

□ The experiments took place at the Vocational School for the Blind in Helsinki, selected because of its comparatively quiet surroundings.

The experimental apparatus was two bicycle wheels, located 5 m. apart, and a wire equipped with a hook that passed around the wheels: the targets presented to the subjects, seated under one wheel, were hung on the hook, and could be moved toward or away from the subject by turning one of the wheels. The wheels were about 2 m. above the floor, but the distance of the targets from the floor was adjusted so their center was always approximately on a level with the subject's eyes. By coating the wheel grooves with plastic, the movements of the wire were made entirely noiseless. The targets were squares made of pasteboard, cloth, and metal, measuring 20 x 20 to 95 x 95 cm., the difference in side length between any square and the next larger being 5 cm.

The room where the experiments took place measured 7 x 6 m. The apparatus was in the middle of the room, parallel to the longer walls. Further details of the experimental arrangements follow in the appropriate sections.

Before planning the main experiments, a few preliminary experiments were made with 12 blind male subjects, to find suitable subjects, and to form at least a crude picture of the difficulty of various tasks, to avoid including too easy and too difficult ones. The results of these experiments were either similar to the results of the experiments proper, to be described later, or trivial in the light of later results. A brief description of the pre-experiments follows.

Obstacle detection I. A metal square, measuring 80 x 80 cm. was moved toward the subject. He had to say when he first perceived the target. There

Experimental Problems

Experimental Set-Up

Preliminary experiments

Obstacle detection I

were 10 starts. Most subjects detected the target immediately after it started moving or even before it began to approach them. Hence, the experimental arrangement was altered for the investigation proper: there, an attempt was made to discover how accurately the subjects were able to estimate the distance between themselves and a moving target. By making the target smaller it would have been possible to arrive at one variant of the experiments through which Rice investigated the detectability thresholds.

Obstacle detection II. A metal square measuring 85 x 85 cm. was the target. The hook was at one of three distances: 70 cm., 150 cm., or 200 cm. from the subject. He was informed of the distance and requested to say whether there was or was not a target at that distance. The distances and the target and no-target situations occurred randomly. Each combination appeared six times. The experiment was all too easy. Rice's variant would have been approached if the targets had been diminished and the relationship between the detectability percentage and distance had been attended to. The target sizes and distances involved here were larger than those used by Kellogg and Rice.

Size discrimination. The targets were all at a distance of 70 cm., and they measured either 20 x 20, 40 x 40 or 80 x 80 cm. Each target was presented to the subject five times, and he was asked to say which of the three was presented on each occasion. This also proved too easy. It was replaced by one where the differences in target size were smaller, and where the method of paired comparisons was applied to targets at varied distances.

Material discrimination. The distance was invariably 70 cm., and the target square measured 50 x 50 cm. Three materials were used: thin woolen cloth, pasteboard, and metal, all in thin wooden frames. There were 30 judgment situations. Each material occurred 10 times, in random order. The subject was requested to state material involved on each occasion. The experiment proved very difficult. The performances of all the subjects were almost all sheer guesswork. Since Kellogg had found that his subjects had good ability in material discrimination, it was decided to use it as a comparatively lengthy learning experiment.

□ Of the 12 blind male subjects in the preliminary experiments only seven were suitable for a longer series, where participation was needed on several days. The five excluded subjects were not strongly enough motivated considering the reliability of the study, even though they were compensated for both the time taken to perform the experiments and travel. For simplicity, the subjects are subsequently referred to by using code numbers running from one to seven.

The subjects were divided into two groups: (1) The experimental group performed all tasks using the ultrasonic aid; and (2) the control group performed the same tasks relying on the natural functions of the ear. Subjects one, two, and three were in the experimental group, the rest in the control group.

In dividing the subjects into two groups, an attempt was made to match the groups with respect to the variables in Table I. In ambivalent situations, the decision was made in part on the subject's preferences—whether he

Obstacle detection II

Size discrimination

Material discrimination

The Subjects

Two groups of subjects

wished to belong to the experimental or the control group. Six of the subjects were rattan workers, and one a university student. All had comparatively high levels of mobility.

The subjects' scores on the control variables are in Table I. They were tested at the Institute of Occupational Health, and the factor tests used were developed for the blind at the Institute.

Variables	Subjects						
	1	2	3	4	5	6	7
Age at onset	7	6	14	8	0	5	5
Duration of blindness	29	19	16	19	23	18	15
Chronological age	36	25	30	27	23	23	20
Verbal ability	+2	+3	-1	+2	+2	+1	+1
Memory	+2	+2	-2	+3	0	-2	+3
Spatial ability	+2	0	+1	+1	+2	+2	+2
Pitch discrimination	—	+1	+1	+2	+3	+1	+3
Loudness discrimination	—	+2	+1	0	0	+1	+3
Audiogram, better ear 1000 cps	5	—	20	0	10	5	20

TABLE 1
The Scores of the Subjects
on Various Control Variables

□ *Experiment arrangement:* A metal square, measuring 60 x 60 cm., was brought, by means of the described apparatus, to a distance of 90 cm. from the subject. When the target was immobile, the subject was permitted to observe it. After he felt sufficiently familiar with it, the experiments proper began. The subject had to say when the metal square, moving towards him, starting from a distance of 2 m., was precisely at a distance of 90 cm. The experiment was repeated 20 times. Thus the subject had to make 20 judgments. To eliminate the possibility of judging the distance of the target by estimating the time taken to move it to the specified distance, the speed of the target's movement was accelerated and decelerated randomly.

**Halting an Approaching Target
at a Specified Distance**

The experimental group performed the task three times: once without the ultrasonic aid and, then, twice using it. The control group performed the same task twice, without the aid.

When the subjects did not use the ultrasonic aid they were permitted to use customary orientation sounds: (snap fingers, whistle, etc.) After each judgment they were told, to the accuracy of one centimeter, where the target had been when they said "now." This feed-back gave them an opportunity to improve their performances. It was not possible for the subjects to rely upon the time it took the target to move: at times the target remained immovable for tens of seconds, then it began to move noiselessly. The different experimental series were carried out at intervals of a few days. The means of the performances of the individual subjects, and the standard deviations of their performances, are in Table 2.

□ As is evident from the means, an improvement in the performance took place over the short training period. The standard deviations provide, however, a more concrete picture of the performances and direction of their development than the means do.

Results

The standard deviations for both groups diminished through training and learning. *The first performance of the experimental group, without the ultra-*

Means of estimates, n = 20				
Subject	With ultrasonic aid		Without ultrasonic aid	
	1st trial	2nd trial	1st trial	2nd trial
1.	91.00	89.75	90.25	
2.	91.50	90.25	82.50	
3.	90.00	91.25	90.50	
4.			80.75	90.75
5.			84.00	88.25
6.			82.25	78.25
7.			81.50	91.50

Standard deviations of estimates

Subject	With ultrasonic aid		Without ultrasonic aid	
	1st trial	2nd trial	1st trial	2nd trial
1.	4.47	1.97	3.43	
2.	4.89	3.80	9.39	
3.	5.62	4.83	8.41	
4.			20.02	13.40
5.			5.98	7.66
6.			13.23	13.01
7.			11.25	7.27

Standard deviations around correct value (90 cm)

Subject	With ultrasonic aid		Without ultrasonic aid	
	1st trial	2nd trial	1st trial	2nd trial
1.	4.47	1.94	3.35	
2.	5.00	3.71	11.83	
3.	5.48	4.87	8.22	
4.			21.59	13.09
5.			8.37	7.66
6.			15.04	17.28
7.			13.87	7.25

sonic aid, and the second performance of the control group displayed a degree of accuracy not expected in advance. The average deviation was less than 3 cm. When account is taken of the technical error margin, it can be maintained that the performance of which the subjects were capable with the ultrasonic aid was virtually faultless. This only shows that the subjects accurately remembered the phenomenological quality of the supraliminal echoes they had heard (when they familiarized themselves with the target at a distance of 90 cm.). Thus, the use of the ultrasonic aid improved the performances; yet it can be maintained that the best among the blind are able to do almost equally well even without an aid in an experiment like the present one.

On the first occasion, when neither the experimental nor the control group used the ultrasonic aid, the former did 10 percent better than the latter. Later, no differences of this sort occurred, and thus the result can be regarded as accidental. Had the persons serving as controls also used the ultrasonic aid, the difference would obviously have been greater.

□ Can any conclusions relevant to everyday practice be drawn from the results? To stop an approaching target at a specified distance is the reverse of

TABLE 2
Estimation of Distance

Unexpected degree of accuracy

A Comment

the situation where a person is approaching an obstacle and comes to a stop at a given distance from it. Even a short period of training is usually sufficient to provide a person with a good command of this kind of performance. The subject (S 2) who did worst without the aid profited most from it. When the experimental subjects used the aid, there were virtually no differences among them. The estimation of distance and the retaining of a distance—when this is a few meters—may be the type of performance that most definitely approaches perfection when the ultrasonic aid is used.

□ *Experimental arrangement.* A pasteboard square measuring 50 x 50 cm. was placed at three distances from the subject: 70, 150, or 200 cm. At these distances, the subject was permitted to observe it. The experiment consisted of an attempt to perceive when the target started moving. The following brief instructions were used: "This pasteboard square will initially be at one or another of these distances, and you will be informed about the distances. At some time it will begin to move towards you or away from you. You have to say 'now' as soon as you notice that the distance has changed. This time, too, the movement will be accelerated and decelerated at random, so as to make it difficult to judge the movement of the target from time intervals. You are again permitted to resort to snapping your fingers, knocking, and so on. Following each judgment you are informed about the distance traveled by the target. The target will be started ten times from each of the three distances. Thus there will be 30 starts in all. To begin with, there will be a few practice trials." This series was run twice with the experimental and three times with the control group. Neither used the aid the first time.

Subject	With ultrasonic aid						Without ultrasonic aid					
	1st trial			2nd trial			1st trial			2nd trial		
	70	150	200	70	150	200	70	150	200	70	150	200
1.	11	14	21	8	11	13.5	26	34	64			
2.	13.5	17.5	24	10	11.5	12.5	39	69	95.5			
3.	11.5	12	17	8	7	11	20	28.5	69			
4.							39	65	92.5	18	48.5	63
5.							33.5	66.5	71.5	28.5	30.5	51.5
6.							29	46	86	20	41.5	77
7.							19	43.5	81	26	42	80.5

□ The mean distance traveled by the target is shown in Table 3 and Figure 1. Because the direction of the movement had no influence on the estimates, the results are combined. The correlation between the means and corresponding standard deviations of the estimates was nearly perfect, .95, in other words, when the distance of the target increased the means as well as the standard deviations of the estimates increased linearly. Therefore, the standard deviations of estimates are not presented. The results showed a very clear-cut trend, allowing the following conclusions:

1. When the series was run for the first time and neither group used the ultrasonic aid, the performances of the two did not differ.
2. There was a very clear linear relationship between the shortness of the distance and the facility with which the starting movement was perceived.

Perceiving the Start of the Target

TABLE 3
Perceiving the Start of the Target:
Means of Estimates

Results

The longer the initial distance, the longer the distance traveled by the target before the change was noticed. The time intervals that elapsed prior to the start of the target were random for all initial distances, and thus the result shows reliably that the performances were not affected by the subject's possible time sense in this experiment, and, obviously not in the preceding experiment either.

3. All control subjects did better on the second than on the first occasion.
4. Use of the ultrasonic aid improved performances throughout; that is, it made the performances surer.

5. For the experimental group, using the ultrasonic aid, the error margin was comparatively small. The errors amounted only to a few centimeters, whereas errors of tens of centimeters were made by the controls, not using the aid.

6. When the series was run for the second time using the aid, the performances of all subjects improved consistently, irrespective of distance.

7. Improvement was greater, relatively at longer than at shorter distances.

8. The same subject was superior to another with and without the aid.

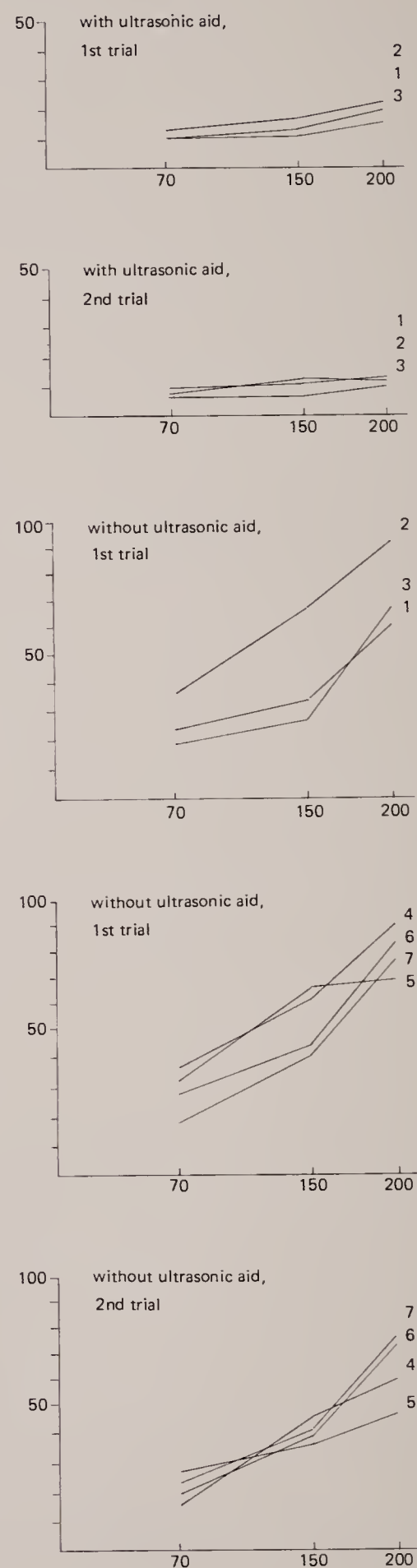
In this experiment, too, the performances of the subject who did worst experienced the most marked improvement when the ultrasonic aid was used. When the subjects used the aid, no significant differences occurred among them at any distance. Even the poorest subject who used the aid did better than the best subject making the judgments without the aid.

It is interesting to compare these results with those in the preceding experiment, where the subject had to stop the target at a distance of 90 cm. There the average margin of error was markedly smaller, in absolute terms, than in the present experiment, even when the initial distance was 70 cm. This, despite the fact that the subjects made echo-producing noises equally frequently in both experiments. Hence, it would seem that changes from rest to motion are responded to less rapidly than changes in motion. In the former, perhaps a sort of adaptation must be overcome. This difference appears irrespective of whether the aid was or was not used. Nevertheless, the difference was smaller, in relative terms, when the ultrasonic aid was used. This is precisely why the aid seemed suitable for tasks of this kind—though situations involving them may not be frequently met in everyday life.

As will be evident later, all subjects incontestably perceived the existence of the target at all distances. This was also obvious from what they said. Why, then, was the facility with which the start of the movement was perceived directly proportional to the shortness of the initial distance? It seems reasonable to assume that the "intensity" of the perception of an object is lower, the longer the distance. Thus, a greater change is necessary for such a vague perception to be discernible. On this basis, it would apparently be possible to estimate the average just-noticeable changes at the various distances.

□ In this experiment the size of the target (50 x 50 cm.) and its distance from the subject (120 cm.) were constant. But the targets varied in material: metal, pasteboard, or cloth. The following instructions were given: "Squares made of pasteboard, cloth, and metal and measuring 50 cm. x 50 cm. each will

FIGURE 1
Perceiving the Start of the Target:
Means of Estimates at Different
Distances



be brought in front of you at a distance of 120 cm. in random order. Each material will appear ten times. You are asked to make 30 judgments in all. Your only task is to state which material is concerned in each case. In this experiment, too, you are allowed to resort to whistling, snapping, and so on." Before the experiment each subject was permitted to observe each target in the experimental situation.

The series was run with the control group four times on four different days, and, with the experimental group, five times. The first time the experimental subjects did not use the ultrasonic aid. Following each judgment the experimenter told the subject the correct answer.

□ The frequencies of correct responses are in Table 4.

As shown in Table 4, all subjects in both groups could distinguish cloth and metal from other materials. Pasteboard was more often confused with other materials. The total performance of each subject was statistically significant, and the average of correct responses the same in both groups. The interindividual differences are marked in both groups but very small regarding different materials.

Material	With ultrasonic aid				Without ultrasonic aid				
	1	2	3	mean	4	5	6	7	mean
Cloth	60+	52+	62+	58+	38	35	55+	80+	52+
Pasteboard	38	32	45	38	50+	42	42	48+	46+
Metal	60+	60+	58+	59+	62+	55+	62+	55+	59+
Mean	52+	48+	55+	52+	50+	44+	53+	61+	52+

+ = significant at the 5 percent level

□ In connection with this experiment, an analysis of the echo sounds transmitted by the ultrasonic aid was also performed with the special apparatus of the Department of Technical Hygiene of the Institute of Occupational Health. This revealed that the sounds corresponding to pasteboard is in between. This explains our results with the ultrasonic aid. Unfortunately, it was not possible to make a similar analysis for echoes. It should be mentioned that it is far from possible to find physical descriptions for all the phenomenological attributes of sound, to say nothing of just noticeable echoes.

□ In these experiments the targets were cardboard squares. The side length varied from 95 to 20 cm., at intervals of 5 cm. The squares were compared pairwise, starting from the pair formed by the largest and the smallest; and the subject had to state whether the second square presented to him was larger or smaller than the one presented first. If the answer was correct, the next largest and the next smallest squares were presented, until the squares only differed by 5 cm. in side length. The pairs to be compared were eight. When the subject first made a mistake, the immediately preceding pair was presented anew. A subject was regarded as being able to distinguish between the two members of a pair correctly if he gave three successive correct answers. Three different distances were used: 70 cm., 150 cm., and 200 cm. The judgment procedure was the same irrespective of distance. The subjects could

Target Material Discrimination

Results

TABLE 4
Discrimination of Target Material:
Percentages of Correct Responses

A Comment

The Perception of Differences
in Target Size

make any echo-producing sounds and noises they considered fit, and were informed of the correct answer after each judgment. The test series subjects (S 1, S 2, and S 3) performed the tasks without the ultrasonic aid only once, whereas the control series subjects did it twice. The test series with the aid was conducted twice.

Subject	Without ultrasonic aid					
	70	I 150	200	70	II 150	200
1.	10	10	5			
2.	10	5	15			
3.	15	15	15			
4.	5	20	15	5	10	10
5.	5	10	20	5	5	15
6.	15	15	5	15	15	5
7.	15	15	5	10	15	5

Subject	With ultrasonic aid					
	70	I 150	200	70	II 150	200
1.	20	10	5	5	10	5
2.	10	10	20	5	5	10
3.	5	15	5	10	5	10

TABLE 5
Judgment of Size at Three Different Distances (70 ,150 and 200 cm.)

□ The results are in Table 5. Each of the three distances will be discussed separately.

Results

Distance 70 cm. On the third occasion, two experimental group subjects were capable of maximum performance: they could discriminate between the two squares whose sides measured 60 and 65 cm. respectively. The third subject in the experimental group did the same when the series was run for the second time, but somewhat worse in the third series. *The most important result, however, was that two of the control subjects also attained a maximum performance in both of the two series relying exclusively on normal auditory functions.* At this initial stage the remaining two subjects were somewhat inferior to the others.

Distance 150 cm. Two of the experimental subjects attained a maximum result, the third was one step lower. One of the these three obtained a maximum result even without the ultrasonic aid. One control subject attained the maximum, another was one step below the maximum. The same two controls who were inferior to the others when the distance was 70 cm. did worse here also.

Distance 200 cm. One experimental subject obtained a maximum result in each of the three series; that is, with the ultrasonic aid, as well as without it. The most surprising result was that the two control subjects whose performances were the worst on the two previous occasions attained a maximum result at such a long distance as 200 cm. They were apparently motivated to improve their performances continually. The other two control subjects, on the other hand, had perhaps grown weary of the task.

□ Certain conclusions, both surprising and of theoretical importance, can

A Comment

be drawn from these results. Prior to presenting them, however, a few explanatory remarks. The experiments were not intended to explore average ability in size discrimination. At this stage it was important to discover what that ability—about which relatively little is known—is in optimal cases. Consequently, the subjects were chosen from persons who proved to be, in an extensive differential-psychological study of the obstacle sense carried out at the Institute of Occupational Health (Juurmaa, 1965), above average in obstacle sense performances. All of them also had normal hearing. As the series required patience, slight fluctuations in the results may have been due to variations in the subjects' motivation. Account should also be taken of random variations, which can be considerable in such a short series of experiments. Nevertheless, the series were run more than once, and a number of subjects and more than a single distance were used; thus, the picture obtained should be comparatively reliable and suitable for orientation purposes. All the results will be the subject of systematic re-examination in the second part of the study.

In view of the above it was surprising to discover that each control subject could identify even the smallest difference in size, from one distance or another. (The finding was the more surprising as the writer was not yet aware of Rice's results.) Thus it appears that the ultrasonic aid is of little use to the best individuals in tasks of this type too.

The results suggest a number of questions: What is the foundation for such an accurate discriminative ability? To what extent can it be improved through training? What are the absolute maximum and average discriminative performances in each particular case? What are the roles played by the distance of the obstacle and by the background? The results strongly suggested a continued, detailed study of size discrimination with which the second part of this empirical study is concerned.

□ Three distances (70, 100 and 130 cm.) were used, three target sizes (the sides of the squares measuring 20, 40, and 60 cm., respectively), and three materials (cardboard, metal and cloth) in all possible combinations. There were $3 \times 3 \times 3 = 27$ combinations in all. Each time a square was presented to the subject he had to state at what distance, of what size, and of which material it was.

The test series subjects performed the series of 27 tasks four times and the control subjects five times. Thus each material, distance, and size appeared in the whole series respectively 36 and 45 times, the total number of guesses for each subject was respectively 108 and 135. After each subtask the subject was informed of correct answers.

□ Because the number of guesses for the experimental and control groups was different, the results are made comparable by presenting them as percentages of correct responses. Because the alternatives of material, size, and distance were equally probable the expected relative frequency to be achieved by random guessing is $1/3$. The results concerning the discrimination of material are in Table 6. The results of the estimation of size and distance are in Tables 8 and 9. The results are presented so that the percentages of correct

Second part of the study suggested by results of the first part

Simultaneous Judgment of Distance, Size, and Material

Results

Material	With ultrasonic aid 36 trials				Without ultrasonic aid 45 trials				
	1	2	3	mean	4	5	6	7	mean
Cloth	61 ⁺	22	39	41 ⁺	31	60 ⁺	40	47 ⁺	44 ⁺
Pasteboard	36	36	50 ⁺	41 ⁺	36	40	44	42	41 ⁺
Metal	53 ⁺	44	31	43 ⁺	42	49 ⁺	33	53 ⁺	44 ⁺
Mean	50 ⁺	37	40	42 ⁺	36	50 ⁺	39	47 ⁺	43 ⁺
Size									
20 x 20	39	33	47 ⁺	40	31	49 ⁺	33	38	38
40 x 40	42	36	33	37	42	49 ⁺	36	53 ⁺	45 ⁺
60 x 60	69 ⁺	33	39	47 ⁺	36	51 ⁺	49 ⁺	51 ⁺	47 ⁺
Mean	50 ⁺	37	40	42 ⁺	36	50 ⁺	39	47 ⁺	43 ⁺
Distance									
70 cm.	56 ⁺	31	31	39	36	42	44	62 ⁺	46 ⁺
100 cm.	47 ⁺	33	47 ⁺	43 ⁺	36	53 ⁺	29	40	39 ⁺
130 cm.	47 ⁺	39	42	46 ⁺	38	53 ⁺	44	40	44 ⁺
Mean	50 ⁺	37	40	42 ⁺	36	50 ⁺	39	47 ⁺	43 ⁺

+ = significant at the 5 percent level

responses in question are calculated as a function of varying material, distance, or size.

As shown in Table 6, the performance level in both groups is nearly similar. In both, there are interindividual differences; in the experimental group, only S 1, and in the control group, S 5 and S 7, guessed better than one could achieve by chance. The effect of the quality of material is not discernible in average performances, but when the best subjects are considered, one may observe that they are better able to distinguish metal and cloth than pasteboard. It is also interesting to note how different materials are confused with one another. The distribution of the estimates of the material is in Table 7.

Target	With ultrasonic aid Response			Without ultrasonic aid Response		
	Cloth	Pasteboard	Metal	Cloth	Pasteboard	Metal
Cloth	41	20	39	44	28	28
Pasteboard	32	41	27	29	41	30
Metal	31	26	43	22	34	44

The percentages of correct responses are higher than the ones of wrong alternatives in the experimental group with the ultrasonic aid as well as in the control group without the aid. It is somewhat surprising that cloth and metal are confused with each other with help of the aid, but clearly discriminated without it. Pasteboard is confused as often with cloth as with metal.

As shown in Table 6, the perceptibility of material depends on target's size. A target measuring 20 x 20 cm. is too small to be reliably observed. The material of the 40 x 40 cm. target, and in the case of the experimental group, the 60 x 60 cm. target, is distinguished to a statistically significant extent. The influence of distance showed no clear tendency in the experiment. It was expected that the estimation of material would be easier from a shorter distance, but the results were contradictory generally as well as individually.

TABLE 6
Simultaneous Discrimination of Material, Distance, and Size: the Discrimination of Material, the Percentage of Correct Responses as a Function of Material, Size, and Distance

Groups similar in performance

TABLE 7
The Percentages of Different Responses for Different Materials

Size of target important in perceptibility of material

Material	With ultrasonic aid 36 trials				Without ultrasonic aid 45 trials				
	1	2	3	Mean	4	5	6	7	Mean
Cloth	72+	86+	75+	78+	42	53+	36	69+	50+
Pasteboard	83+	78+	67+	76+	56+	53+	56+	71+	59+
Metal	78+	86+	64+	76+	51+	67+	49+	73+	60+
Mean	78+	78+	74+	77+	50+	58+	47+	71+	56+
Size									
20 x 20	89+	86+	89+	88+	42	56+	69+	87+	63+
40 x 40	53+	78+	81+	70+	47+	53+	40	60+	50+
60 x 60	92+	86+	36	71+	60+	64+	31	67+	56+
Mean	78+	78+	74+	77+	50+	58+	47+	71+	56+
Distance									
70 cm.	92+	86+	56+	78+	60+	64+	53+	69+	62+
100 cm.	78+	83+	72+	78+	49+	64+	51+	82+	62+
130 cm.	64+	81+	78+	74+	40	44	36	62+	46+
Mean	78+	78+	74+	77+	50+	58+	47+	71+	56+

+ = significant at the 5 percent level

In distinguishing size, the experimental is clearly better than the control group; the percentages of correct responses are 77 and 56. The target's material has no influence on the discrimination of size; size as such does not have very strong influence. Both groups recognized the smallest target a little better than the others. The influence of distance is only slight within the limits employed in this experiment, correct responses are not as common from the distance of 130 cm. as from shorter distances. In the experimental group using the aid the interindividual differences are somewhat small, but in the control group one subject, S 7, performs better than the others and nearly as well as the experimental group.

As shown in Table 9, the experimental group is also clearly better than the control group in distinguishing distance. The target's material has no marked

TABLE 8
Simultaneous Discrimination of Material, Distance, and Size: the Discrimination of Size, the Percentage of Correct Responses as a Function of Material, Size, and Distance

Size most easily distinguished

Material	With ultrasonic aid 36 trials				Without ultrasonic aid 45 trials				
	1	2	3	Mean	4	5	6	7	Mean
Cloth	81+	86+	81+	82+	40	60+	36	56+	48+
Pasteboard	83+	78+	72+	78+	38	51+	31	62+	46+
Metal	97+	83+	86+	89+	38	64+	38	58+	49+
Mean	87+	82+	80+	83+	39	59+	35	59+	48+
Size									
20 x 20	81+	72+	83+	79+	29	47+	29	38	36
40 x 40	92+	94+	86+	91+	38	64+	29	69+	50+
60 x 60	89+	81+	69+	80+	49+	64+	47+	69+	57+
Mean	87+	82+	80+	83+	39	59+	35	59+	48+
Distance									
70 cm.	92+	86+	78+	85+	58+	62+	47+	62+	57+
100 cm.	81+	83+	72+	79+	27	62+	20	47+	39+
130 cm.	89+	78+	89+	85+	31	51+	38	67+	47+
Mean	87+	82+	80+	83+	39	59+	35	59+	48+

+ = significant at the 5 percent level

TABLE 9
Simultaneous Discrimination of Material, Distance, and Size: the Discrimination of Distance, the Percentage of Correct Responses as a Function of Material, Size, and Distance

influence on the distance discrimination. Larger targets are more easily perceived than smaller ones. Distance as such again has such an effect that the middlemost distance is confused with the others. In the experimental group, the performance level of different persons is about similar, but in the control group S 5 and S 7 do better than the others. Thus the interindividual differences are similar as with discrimination of material.

□The experiments reported here are exploratory. The purpose was to find out, (1) whether it is possible for a blind person to discriminate between different materials, sizes, and distances of targets near him relying exclusively upon natural auditory functions, the so called "obstacle sense"; (2) to what extent the blind person gains by using a special mobility aid (ultrasonic aid) in the same tasks. Both problems as such have been little investigated, and their comparison in the same experimental circumstances not done before. Thus it is relevant to draw conclusions for everyday practice.

As for the control subjects who worked unaided, relying exclusively on auditory functions, the results suggested by the empirical study can be summarized as follows:

1. The subjects were to some degree able to distinguish between different materials. Cloth and metal seemed to be the easiest materials to distinguish; pasteboard was often confused with the former ones. When the degree of difficulty of the task was increased, in the simultaneous discrimination of material, size, and distance, the percentage of correct responses decreased; however, the two best subjects were still able to guess better than chance.

2. Rice's results revealed that the ability of the blind to make size discriminations by echo perception is astonishing; it can be compared with monocular vision acuity. Thus, it is not surprising that the best subjects were able to discriminate between the two squares with sides measuring 60 and 65 cm. from a distance of 200 cm. However, the results of this experiment as well as Rice's were achieved in purified laboratory conditions. When the task was made more complicated by simultaneously varying material, size and distance of the target, the average percentage of correct responses decreased to 56, although the interval of the sides of the targets was 20 cm.

3. In the above-mentioned simultaneous discrimination task, where the targets were immobile, the distance of the sufficient large targets was easily perceived. The estimates with moving targets were also quite accurate. For example, in halting the target at a specified distance, which is analogous to stopping at the same distance from it, the standard errors around correct value ranged from 21.6 to 3.4 cm.

4. Extraneous factors strongly influenced the performances of the subjects. With a two-fold effect: on the one hand, the intermediate stimulus was confused with the extreme ones; on the other hand, the performances of the subjects were directly proportional to the physical dimensions (size and distance of the target).

The results of the subjects using the ultrasonic aid are briefly:

1. In discriminating material, the subjects did not do better than the subjects without the aid even though better than by guessing. Cloth and metal

Discussion

Results from the control group of subjects

Results from the experimental group of subjects

again appeared to be the easiest materials to distinguish. Analysis of the sounds of the aid revealed that the sounds corresponding to cloth and metal differed most from each other.

2. The judgment of fine differences in size was also on the same level as in the control group. However, this performance, largely dependent on the physical dimensions of the target did not deteriorate to the same degree in the more difficult simultaneous discrimination tasks.

3. Distance estimation seemed the most suitable task to be performed with the ultrasonic aid. The results are extraordinarily accurate, up to some centimeters in the halting of the approaching target, depending on the technical qualities of the instrument used. Because it is based on ultrasonic waves, a slight difference in distance produces a marked difference in the transformed audible sound.

4. The performances of the subjects were not influenced by extraneous factors to the same degree as in the control group. However, the tendency was in the same direction.

In all experimental tasks the performances of the control group relying exclusively on natural auditory functions were surprisingly good. The performance level decreased considerably when the task was at once threefold: judgment of material, size, and distance of the same target. The essential feature of the performances with the ultrasonic aid is their dependence on the instrument's technical qualities. For example, a photoelectric aid would be more suitable in distinguishing the material of the target, whereas the ultrasonic aid is well suited to distinguish between different distances and sizes of targets.

The performance level of the performances with a technical aid is not dependent to the same degree upon the complexity of the experimental (or natural) situation, because the different features of the experimental situation can be considered one at a time. When the subject has to rely on echoes reflected from the target, his auditory impression (which he can not consciously differentiate) is global and influenced in similar manner by different changes in experimental setting. Thus, the performance level of the control group decreased in the simultaneous discrimination task.

However, the natural perception of echoes makes it possible to master the whole environment at once, while the technical aid reveals only one detail at a time. The most important disadvantage of Dr. Kay's ultrasonic aid is still the difficulty in receiving other auditory impressions simultaneously. In special circumstances, different technical mobility aids are appropriate, but optimism about their possibilities should not reduce interest in training the natural auditory capabilities of the blind.

Control group performed surprisingly well

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Presidential Task Force on Problems of the Physically Handicapped

The President has announced the establishment of another in the present series of task forces to assist the Administration with ideas and recommendations for 1970 and beyond. Ralph E. DeForest, M.D., director of the Department of Postgraduate Programs of the American Medical Association, will be chairman of the Task Force on Problems of the Physically Handicapped. The Task Force will review what the public and private sectors are now doing for handicapped Americans, and make recommendations as to how best to achieve maximum help for the affected individual. Besides evaluating the effectiveness of present assistance programs for the handicapped, the Task Force will consider how community awareness and actions might be increased in the interest of the handicapped.

The members of the Task Force on Problems of the Physically Handicapped are: W. Scott Allan, Boston; Robert L. Bennett, M.D., Warm Springs, Georgia; Lawrence W. Binger, St. Paul, Minnesota; Hampar Kelikian, M.D., Chicago; John W. Melcher, Madison, Wisconsin; Mrs. Genevieve H. Schiffmacher, Boston; Alfred Slicer, Springfield, Illinois; Lawrence Smedley, Washington, D.C.; William A. Spencer, M.D., Houston; S. Daniel Steiner, M.D., Detroit; Mrs. Spencer Tracy, Los Angeles; and Henry Viscardi, Jr., Albertson, Long Island, New York.

The Foresight Club: A Note on Associations for the Blind

Man's tendency to create structured social groups has long puzzled the great thinkers; little, however, is really known regarding this ubiquitous characteristic in man's nature. Whether the process is inborn or acquired in the course of satisfying one's need for survival has not been settled, but for the purpose of this discussion the matter is not relevant. Granting that the desire to affiliate with others is a universal human quality, the existence of this tendency among visually impaired persons should not be looked upon as a form of dependency and helplessness brought about by a failure in acceptance of and adjustment to their handicap, but rather, should be considered a non-distinctive normal quality of mankind.

□ Social psychologists cannot yet delineate all the many complex factors that draw people into groups, but one of the most conspicuous factors, even to the laymen in this area, is the formation of organizations and clubs based on commonalities among the members such as age, sex, location, and more significant factors such as interests, occupations, and goals. Presently, a prominent trend toward uniting into formally structured groups on the basis of common human problems is apparent in a wide range of situations. Such clubs and organizations range from golden-age groups, who affiliate primarily for recreational and mutual support purposes, at one extreme, to T-groups and group therapy affiliations that work through deep-seated personal problems at the other. Between these may be found a wide variety of other types. One sees parents of retarded children joining together to deal with their common problems; parents of other handicapped children doing the same. Alcoholics Anonymous has long been the most outstanding method for dealing with the problems associated with uncontrolled drinking.

With this in mind, one might ask how abnormal and deleterious are the associations of the visually impaired which seem to be looked upon with disdain by educators and workers for the blind, who tolerate them probably because they cannot suppress them, since the tendency to unite among those who have common problems is so strong. Of all the workers for the visually impaired, this tendency is strongest in those who work with the young, who are the most trainable; it also exists among those who deal with the elderly and the helpless. With respect to the question of the helpless and the elderly—even with this group the agencies for the blind have continuously and persistently opposed the establishment of associations for the blind, despite the many problems that these groups have in integrating among their sighted counterparts. The argument that seems most convincing, particularly with the young, is that associations for the visually impaired foster an unwholesome inbreeding that not only hinders participation and involvement with the

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Groups Formed Around Something Shared by Members

Some objections to associations for the blind

sighted world, but also, analogously to inbreeding on a biological level, creates, strengthens, and reinforces undesirable trends in personality growth. A corollary of this argument is that a blind person is supposed to find his group more accepting and comfortable; thus, he is not motivated to sally forth into the harder but much more beneficial world of the seeing. The author is not professionally qualified to deal with this issue but maybe some unprofessional observations from one who has benefitted immensely from an association for visually impaired persons will help the professionals in this area.

□ No doubt about it, many pressures and many benefits motivate a visually impaired person to constantly strive to function adequately with the sighted. It seems highly doubtful that associating with others with a similar handicap should lessen the impelling attracting value of these incentives. The author believes that there are those who will never function acceptably enough to live and work in the sighted world. This is true also with many others, such as the inadequate personality and the psychopathic deviate, psychologists and psychiatrists have not yet been able to treat effectively. But for those who have great potential to work and live "normally" in society, the associations for the blind can serve to inspire him and encourage a more complete involvement and participation outside of the group; particularly, if this is one of the objectives of the group, whether explicitly or implicitly recognized. Unless there is a change in his visual condition, his impairment remains a constant factor in the situations with which he must deal. Like recurring physical needs, the problems his impairment presents are never completely solved. He has this striking similarity, although in varying degrees, with other visually impaired persons with whom he associates. This, of course, is not usually, nor should it be, the only grounds for association, but one of the potent factors among many others. A blind college professor would probably not find much in common with an association of blind piano tuners, and vice versa, but he might find much of value in an organization composed of other professional workers.

□ A description is presented here of a unique organization of independently employed blind men and women founded in Cleveland in 1965. As a member of this organization for four years, being also its cofounder and a previous president and vice-president, the author feels competent to serve as spokesman for the organization. A stronger motivation for writing about the organization is the benefits the writer has accrued from his affiliation with it.

The account that follows is divided into the following sections: the purpose of the founding of the organization; the formal structure of the club; the typical operations of the group; and the future goals.

In Cleveland, as in many other complex urban communities, a number of associations for blind persons exist; some are under the sponsorship of the local agency for the blind; some are sponsored by religious organizations; one, the Mutual Federation for the Blind, is an affiliate of a national group. The author, together with Mr. Mitchell Darling, the cofounders of the Foresight Club, in discussing the matter of associations for the blind, both came to the conclusion that there was a need for an organization for those who functioned outside the sphere of agencies and the usual associations for the blind. Many

Some Benefits of Associations for the Blind

Cleveland Organization

The founding of an independent organization





blind persons who hold competitive jobs in the sighted world have little knowledge of and acquaintance with other visually impaired individuals who are of a like mind. It seemed that such persons could benefit from the interchange of ideas and from mutual stimulation in an organized group. The number of such persons was difficult to estimate because many of them have no contacts with agencies for the blind, or for that matter, many other blind persons. Before the formal founding of an organization, this point was explored. Within several weeks, a group of seven men was invited to a dinner meeting. To give some idea of the type of person who came to the first meeting, the following professions were represented: a college teacher of psychology; the general manager of a radio station; an insurance representative; a practicing doctor of osteopathy; a receptionist of a suburban city hall; an expeditor for a large elevator company; and a real estate agent.

□ A discussion of the formation of a club for men and women of similar qualifications as those present led to the formation of the organization described. Names of clubs and associations do not always describe the purposes or functions of the groups, and the name Foresight Club probably does not either. Without in any way denying the limitations of the visual impairment, the members agreed upon the name Foresight Club as representing the spirit of the group, namely, seeking as much as possible status in the community of normally functioning and contributing persons, differing as little from sighted members of the community as possible. Thus, the metaphorical implication of "for sighted existence." The keynote of the group was independence—in travel, in occupation, and in the general outlook on life. The author does not particularly like the name of the group but sympathizes with the spirit which the name connotes.

It was decided after considerable deliberation that a necessary, but not sufficient requirement, for membership in the club was independent, competitive employment. Excluded from consideration were those who were in any way subsidized, such as sheltered shop employees. The work had to be of such nature that it was a job that was normally done by a sighted person. The specifics were to be decided upon by the membership committee. The broadness of the basic criterion was deliberately designed. It allowed for the inclusion of a wide range of occupations such as professional, business, and even labor. It should be noted that while the intended membership was to include all levels of occupational endeavours, the preponderance of members are from professional and business occupations. Such matters as compatibility of potential members with the existing group, attitudes toward independence, etc. were to be dealt with by the membership committee. After the organization had operated for two years, the membership decided to form a category of membership designated as associate member for those who could benefit from affiliation with the group. Qualifying for this status were college students who were training for independent employment and another notable group, those who were in the process of rehabilitation which could eventuate in independent employment. The progress of the associate members was to be periodically reviewed.

The Foresight Club

Membership categories and requirements

□ The organization is composed of the usual officers: president, vice-president, and secretary-treasurer, but of greater significance are three standing committees whose functions constitute the major purposes of the group. These are the legislative, public relations, and agency committees. In addition to the work of these committees, there are other programs such as "College Night" and "Bosses Night" which will be described later.

The legislative committee is concerned with legal matters that pertain to legally blind persons. It should be noted here that the concern of this committee is not to secure special exemptions and benefits for the members, but rather to report on pending or enacted legislation. The committee is empowered to recommend steps that the organization as a whole or individuals may take. One of the guiding principles of this committee, as well as the organization as a whole, is that while the members of the Foresight Club strive continually for independent status and encourage and help other visually impaired persons to seek and attain the same end, they recognize that there are those who cannot do so and whose living conditions depend on governmental aid.

The major objective of the public relations committee is to communicate to the public the work of the organization and to create a better image of blind people. An example of the work of this committee was a series of 15-minute programs that involved interviews with the members of the organization regarding their careers, training, and attitudes toward their visual impairment. These programs were carried by the Storer broadcasting station WJW in Cleveland. A copy of the series has been made available to the Library for the Blind of the Cleveland Public Library.

The purpose of the agencies committee is to keep abreast of policies and functions of agencies for the blind. The committee may recommend action for the organization as a whole to inform agencies of questionable practices. The organization, for example, through the contribution of individual members, supported a student for the first year of college even though his request for assistance was turned down by the State Rehabilitation Service. It is noteworthy that his performance was impressive enough that his case was reconsidered and he was given support for the remainder of the training. None of the members of the organization are dependent upon agency services but recognize that such agencies have an indispensable role in the community. In recognition of this fact, the members of the Foresight Club are willing to assist counselors and clients of agencies for the blind by serving as consultants. Clients in the rehabilitation program are also invited to meetings to acquaint them with the work of the organization. While there has been a close and friendly relationship between the organization and the local agencies for the blind, the framers of the constitution of the organization felt the necessity of maintaining a pressure group to balance a possible one-sided situation.

□ Meetings are held monthly in a restaurant setting. There is usually a cocktail hour followed by dinner, and then the formal business part begins. Visitors have commented that the general proceedings of the meetings are not different from the typical business and professional organization meetings. After the business meeting, a speaker rounds out the activities for the evening. The

Officers and Committees

Legislative committee

Public relations committee

Agencies committee

Monthly Meetings

topics covered range from those of general interest to hard-working men and women in middle class settings to specific matters related to the problems of blindness. It should be pointed out, however, that this aspect is not stressed. More often than not, the topic is not a part of the proceedings.

The total membership is 17, with the attendance at the monthly meetings ranging from 10 to 15 members. Guests and wives are usually permitted at meetings. The atmosphere is quite pleasant and congenial. Most of the members are married, have families, and own homes that are for the most part in the suburbs around the city of Cleveland. Thus, in addition to the visual impairment, the members have a great deal in common, and this after all is probably the major reason that the organization has survived.

□ Much of the activity of the organization is of a purely recreational nature, and there is a social committee for that purpose. One of the activities involves weekend camping trips in the fall and spring. These excursions have proved to be especially enriching since the members and their wives have a genuine opportunity to work together and share common experiences related to bringing up children, doing yard work, and other problems associated with independent suburban living. It should be pointed out here that although friendships among club members and their wives have developed, and have led to extra-club activities, the members have not restricted their associations to club members only.

Since the organization has been in existence just over four years long standing traditions have not yet been established. One annual affair that has been gaining in popularity and seems destined to continue is "College Night." Visually impaired college students are invited to the September meeting to meet the members and learn about the organization. Incidentally, this meeting has also served a function not anticipated by the members when the idea of "College Night" was originated, i.e., the students have an opportunity to get to know each other. At this meeting, students together with the members discuss problems of college training, career planning, and the typical matters which are of concern to people of this age group. The popularity of this event is indicated by the fact that 11 students attended the last meeting.

Another event that may become a part of the tradition of the organization is "Bosses Night." One meeting of each year is set aside for the members to invite their supervisors. The invitation has been broadened to include representatives of large corporations in the area. The members hope in this way to create a more favorable attitude toward employment of visually impaired persons. Usually at this meeting, the member gives his background and work experiences and also introduces the guest he brings. The effectiveness of this effort is difficult to assess, but the experience of being with a group of visually impaired persons who represent a wide diversity of occupations may inspire the potential employer to take a less stereotyped view of blind persons.

□ A description of this sort can too easily focus upon the bright side of the picture and thereby give a distorted account. The Foresight Club has wavered in its infancy, and for a time, there was some question regarding its viability. There were difficulties in securing a central meeting place, the ever-present

Members

Activities

"College Night"

"Bosses Night"

Early Problems Were Overcome

problem of transportation, the consolidation of objectives, and a host of others. The group has survived for four years with a moderate growth. A core group of members has emerged. The hope of the organization rests with the young blind persons. The students have expressed a feeling of inspiration in the meetings they have attended. They feel that the organization serves a definite need, providing a model which they can emulate. The problems ahead of them are similar to those faced by the members of the Foresight Club.

There have been tangible results too. One of the respected members of the organization who was acquainted with the president of a large company was instrumental in obtaining an interview for an associate member who was trained in computer programming but was not employed. Although the rehabilitation counselor also participated in the interview, the contact was initiated by the member of the Foresight Club. The outcome turned out quite favorably with the associate member obtaining a position as a computer programmer. Another member of the organization had a friend who was an administrator in a hospital. She was looking for a medical secretary. The Foresight Club member knew of a girl, not a member of the organization, who was trained in that work. An interview was arranged, and the girl subsequently received the position. Like the case described above, the potential employer was willing to consider hiring a blind person because he had high respect for another blind person.

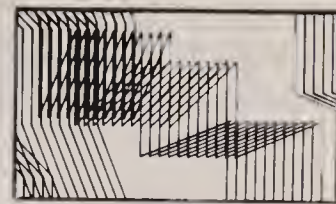
Some tangible results

The members of the Foresight Club would probably scoff at anyone who suggested the possibility of unwholesome inbreeding and dependence as a result of affiliation with the organization. Their experiences have been quite to the contrary. The members of the group find each other a source of mutual stimulation and inspiration. A high level of respect exists among the members. Everyone is aware that the effort to live and function as an independent and contributing member of his community is fraught with many difficulties, and, at times, requires almost heroic feats of perseverance.

NEXT MONTH: The May issue of *The New Outlook for the Blind* will include articles on the experiences of a blind school psychologist, the psychological testing of blind children, the utilization of standards and accreditation, and a special braille reading series for blind children.

Answers to Accreditation Questions

National Accreditation Council for Agencies Serving the Blind and Visually Handicapped



Q. *How much will accreditation cost?*

A. Costs vary according to the size of the agency or school involved. Dues for accredited members are 0.0005 of total annual operating budget with a minimum of \$50 and a maximum of \$500. In addition, there will be the one-time cost of purchasing the appropriate "Self-Study and Evaluation Guide." Also the application fee of \$150 is payable before the on-site review phase of the process. Finally, the applicant organization meets the travel and maintenance expenses of the visiting review team. The size of the team varies according to the size, complexity, and geographical dispersion of the agency being visited.

Q. *Would it be appropriate to involve any outsiders in our self-study?*

A. By all means. In addition to the participation of your staff and board, it is highly desirable to utilize the wisdom and talents of professional colleagues and specialists in related types of operation. For example, your local welfare council

may be able to recommend a person qualified to help you install the now nationally-recognized uniform accounting procedures if you have not yet done so. Field staff of national organizations such as the Consulting Service on Recreation for the Ill and Handicapped of the National Recreation and Park Association may be of assistance if you have a recreation program. Local chapters of the Public Relations Society of America usually have public service committees that can be approached for advice. In addition, do not overlook nearby graduate schools of social work, vocational rehabilitation counselling services, and client representatives as possible sources of self-study committee members.

Committees should not be so large that they are unwieldy but the fresh opinions of a few well-chosen people can be very helpful.

Q. *What shall we do about our very active volunteer group which prepares textbooks in braille for students in our area?*

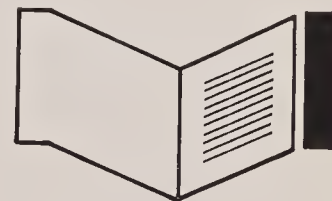
In your self-study materials, there are no standards for producing braille.

A. The standards are coming. In September 1970, the Council expects to publish standards for the production of reading materials in braille (tactile), recorded, and large type forms.

You can use these standards in conjunction with the standards for volunteer service in the "Self-Study and Evaluation Guide." Together they will provide a basis for evaluating your program. Meanwhile you can go ahead with the study of other aspects of your program and administration.

What is your question about accreditation? Send it to Accreditation Questions, c/o National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, 79 Madison Avenue, Suite 1406, New York, N.Y. 10016. If it is of general interest we will try to answer it in this column, but, in any case, you will receive an answer.

Current Literature



The Socialization of Blind Children, by Robert A. Scott. In: David A. Goslin (ed.) *Handbook of Socialization Theory and Research*. Rand McNally & Company (405 Park Avenue, New York, New York 10022), 1969, p. 1025-1045 (Chapter 26). \$20.00. Dr. Scott examines the social and psychological limitations inherent in the disability of blindness.

An Educational Program to Assist Blind Homemakers, by Catherine E. Holt. *The Seer* (Pennsylvania Association for the Blind, 2843 N. Front Street, Harrisburg,

Pennsylvania 17110), Vol. 40, No. 4, December 1969, p. 22-26. Report on a series of workshops, sponsored jointly by the Bureau of the Visually and Physically Handicapped of the Pennsylvania Department of Public Welfare and the Cooperative Extension Service of the Pennsylvania State University, designed to aid blind housewives in meal preparation.

Implications of Tactile-Kinesthetic Ability in Visually Handicapped Children, by Donald Hammill and John M. Crandell. *Education of the Visually Handicapped*

(1839 Frankfort Avenue, Louisville, Kentucky 40206), Vol. 1, No. 3, October 1969, p. 65-69. Study conducted at the Overbrook School for the Blind in Philadelphia, using both legally blind and partially sighted children.

Creative Writing and the Blind Child, by Edith L. Sennet. *Education of the Visually Handicapped* (see address above), Vol. 1, No. 3, October 1969, p. 81-85. Mrs. Sennet discusses tactile and auditory means of helping blind children develop meaningful concepts of abstract words.

Getting the Jump on College Problems, by J. Terry Carney. *Tennessee Public Welfare Record* (Department of Public Welfare, 410 State Office Building, Nashville, Tennessee 37219), Vol. 32, No. 5, October 1969, p. 109-111. Report on the design of a special summer program to help blind students make the transition from high school to college. Eight Tennessee blind students took freshman courses, together with special orientation work, at George Peabody College for Teachers. An in-depth report based upon the experiences of these students should be available in early spring, 1970.

A Chance for the Blind Retardate, by Elizabeth Wilson. *Tennessee Public Welfare Record* (see address above), Vol. 32, No. 6, December 1969, p. 128-131. Description of the design and operation of the Southeast's first complete rehabilitation program for persons who are both mentally retarded and blind. The project began on September 1, 1969, and is at the Orange Grove Center for the Retarded in Chattanooga, Tennessee.

Teaching Music to the Blind, by Don Wiley. *Clavier* (Instrumentalist Co., 1418 Lake Street, Evanston, Illinois), November 1968. 3 p. Mr. Wiley, who lives in Hawaii, has been teaching piano to blind students for a number of years. He suggests teaching methods and outlines lesson plans.

Charitable Canines. *MD Medical News-magazine* (MD Publications, Inc., 30 East 60th Street, New York, New York 10022), Vol. 13, No. 9, September 1969, p. 277-284. \$1.50 per copy. Illustrated history of guide dogs, with special emphasis on Seeing Eye, Inc. of Morristown, New Jersey.

An Educational Program for Blind Infants, by Selma Fraiberg, Marguerite Smith and Edna Adelson. *The Journal of Special Education* (3354 Byberry Road, Philadelphia, Pennsylvania 19154), Vol. 3, No. 2, Summer 1969, p. 121-139. The authors are engaged in longitudinal studies in infants blind from birth. This essay describes aspects of their educational work with both the blind babies and the babies' parents.

The article is followed by a review (p. 141-142) by Dorothy Burlingham of the Hampstead Child-Therapy Clinic, London.

The Sound of the Walls, by Jacob Twersky. A paperback edition of Dr. Twersky's autobiography, originally published in 1959 by Doubleday, is available from Curtis Books, Curtis Circulation Co., 641 Lexington Avenue, New York, New York 10022. It costs 75¢.

Reanalysis and Critique of "Sensory Discrimination" as an Ability Component of the Blind, by M. H. Tillman, W. L. Bashaw and Michael Bradley. *Perceptual and Motor Skills*, Vol. 29, No. 1, August 1969, p. 283-288. A criticism of Jyrki Juurmaa's *Ability Structure and Loss of Vision* (New York: American Foundation for the Blind, 1967. Research Series No. 18.) Juurmaa's reply to the criticism follows on pp. 289-290. Reprints are available from Dr. M. H. Tillman, University of Georgia, Athens, Georgia 30601.

—M.M.R.

News in Brief

■ John D. Twiname was appointed administrator of the Social and Rehabilitation Service, Department of Health, Education, and Welfare, effective March 1, 1970. Mr. Twiname joined SRS in April 1969 as deputy administrator under Mary E. Switzer, who recently resigned as administrator. Before joining SRS, Mr. Twiname was marketing vice president of the American Hospital Supply Corporation, Evanston, Illinois. He also served as president of the board of the Chicago Business and Industry Project, an agency formed to bring together black leaders, businessmen, and labor leaders, as well as government and university officials, to focus on social problems.

■ Paul J. Langan, who has served for the

past three years as Middle East-Northeast Africa regional director of the American Foundation for Overseas Blind, will return to the Foundation's New York headquarters in mid-April to assume new duties as special projects consultant. A member of the Foundation's staff since 1956, Mr. Langan helped organize its Far East programs and served as Europe regional director and as program consultant. Prior to joining the Foundation, he was superintendent of the Kentucky School for the Blind.

Stanley E. Bourgeault, Ed.D., has been appointed to succeed Mr. Langan in the Beirut, Lebanon, office. Dr. Bourgeault joined the Foundation in 1966 as an education consultant directing the initiation of the integrated education program in

Taiwan, and has most recently served as regional special consultant in the Far East. He was previously assistant professor in charge of the teacher preparation program in the area of the visually handicapped at Colorado State College.

■ Because of the increase in accreditation activity, the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped moved its offices on February 17, 1970, to larger quarters at 79 Madison Avenue, Suite 1406, New York, N.Y. 10016.

■ Stephen Hess, a member of the President's White House staff, has been appointed chairman of the 1970 White House Conference on Children and Youth.

The author of several books on politics and a former staff assistant to President Eisenhower, Mr. Hess relinquished his most recent post as deputy assistant to the President for urban affairs to accept the conference chairmanship.

The White House Conference on Children and Youth, the oldest of the White House Conferences, will be held in Washington on December 13-18, 1970. Dr. Joseph H. Douglass, until now the conference's executive director, will serve as chairman of the conference's executive committee and will be Mr. Hess' primary policy advisor.

■ The Cleveland Society for the Blind recently received an \$8,700 grant from the Kulas Foundation for a one-year demonstration project for the production of braille music. In addition to transcribing music into braille, the project will teach the fundamentals of braille music transcription to blind and sighted volunteers and the fundamentals of music theory and keyboard harmony to blind students.

■ "Dimension," a free exhibit of sculptures, bronzes, porcelains, and glass, was conceived and sponsored by the California Arts Commission specifically for the enjoyment of blind persons. After a six-week display period at the deYoung Museum in San Francisco in January and February, the exhibit has begun a tour of the major cities of California.

■ The Danish Institute for Information About Denmark and Cultural Cooperation With Other Nations will sponsor a seminar, to be held in Copenhagen on August 16-22, on "Social Denmark." The program will treat the three main fields in Danish social welfare: child and youth welfare, welfare of the aged, and services for the handicapped. By means of lectures, discussions, and visits to social institutions the seminar will introduce the social welfare system in Denmark, its day-to-day operation as well as tasks and plans in progress, and legislation and bills to be passed. Danish social workers will take part. Further information is available from Det Danske Selskab, Kultorvet 2, DK 1175, Copenhagen, Denmark.

■ The Seeing Hand Association of Wheeling, West Virginia, will be holding the Seeing Hand Camp for the Blind on July 26-August 1, 1970. Fifty blind men and women, 17 to 60 years of age, will be accepted for the camp. Further information is available from Miss Ethel C. Elikan, Executive Director, Seeing Hand Association, 737 Market Street, Wheeling, West Virginia 26003.

■ Mrs. M. Gladdieus Martin, 77, a former member of the New York State Commission for the Blind, died January 20 in Bradenton, Florida. Mrs. Martin joined the commission in 1930 and became supervisor of the vending stand program in 1942, a position she held until her retirement in 1958.

Coming Events

April 12-18 National Library Week

April 19-25 Council for Exceptional Children, 48th Annual International Convention, Chicago.

April 23-24 National Conference on Standards for Production of Reading Materials, Chicago.

April 24 National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Annual Meeting, Chicago.

April 24-25 President's Committee on Employment of the Handicapped, Annual Meeting, Washington, D.C.

May 3-8 American Nurses Association, Miami.

May 11-13 Regional Librarians for the Blind and Physically Handicapped, Annual Meeting, New York City.

May 17-20 American Association of Workers for the Blind, Midwestern Regional Meeting, Detroit.

May 31-June 4 National Conference on Social Welfare, Annual Meeting, Chicago.

June 1-5 World Federation of Occupation-

al Therapists, Fifth International Congress, Zurich, Switzerland.

June 7-11 Special Libraries Association, Detroit.

June 27-July 2 Association for Education of the Visually Handicapped, New Orleans.

June 28-July 3 American Physical Therapy Association, Washington, D.C.

June 28-July 4 American Library Association, Annual Convention, Detroit.

June 29-July 17 Movement in Education: A Symposium Illuminating the Role of Movement in the Education of the Normal and of the Atypical Child, conducted by Bryant J. Cratty, Ed.D., at La Verne College, La Verne, California.

July 22-24 American Association of Workers for the Blind, Southwest Regional Meeting, Little Rock.

August 17-21 International Congress on Education of the Deaf, Stockholm, Sweden.

September 24-25 American Association of Workers for the Blind, Middle Atlantic Regional Meeting, New York City.

September 25-27 American Association of Workers for the Blind, Western Regional Meeting, Hollywood, California.

September 27-October 1 National Recreation and Parks Association, Philadelphia.

October 5-9 American Academy of Ophthalmology and Otolaryngology, Las Vegas.

October 12-16 Audio Engineering Society, New York City.

October 17-22 American Academy of Pediatrics, San Francisco.

November 7-13 American Occupational Therapy Association, New York City.

December 13-18 White House Conference on Children and Youth, Washington, D.C.

Sensi-Quik

The Touch Cane for Walking
Faster with Safety



Sensi-Quik's contour handle arranges the fingers for quick down-touching and accurate, rhythmic side motion with thumb and finger, minimizing wrist action. The nub at the handle's elbow rides in the crotch of thumb and forefinger, providing purchase for fingers when the hand perspires or when it rains. The tapered-off end reduces "tripping hazard" on crowded sidewalks.

Made of flexible fiberglass, tipped with diamond-hard tungsten carbide, the Sensi-Quik touch cane gives the traveler a sharp signal and alerts other pedestrians to his approach.

The cane's working tip, a carbide disk one-half inch in diameter, gives the user a special advantage in the subway. As he moves across the loading platform toward the train, the carbide tip glides easily over the rough concrete surface, giving off a "rippling" sound. Other riders, alerted by this sound to the traveler's approach, are more likely to help him get aboard.

The carbide tip, originally developed in 1956 for the bamboo model of the Sensi-Quik, is now available for the fiberglass model, which was introduced in 1965 and has been continuously improved ever since. The shaft of the fiberglass cane is tubular in construction, giving adequate strength within necessary restrictions in weight.

The fiberglass model comes with either crook or contour handle and either carbide or replacement steel tip. The bamboo model, still available to those who prefer it, comes with polished wood crook handle and carbide tip.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact

Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

Mr. Franklin S. Clark
The Go-Sees
166 East 92nd Street
New York, N.Y. 10028

THE NEW Outlook FOR THE BLIND

May 1970 Volume 64 Number 5

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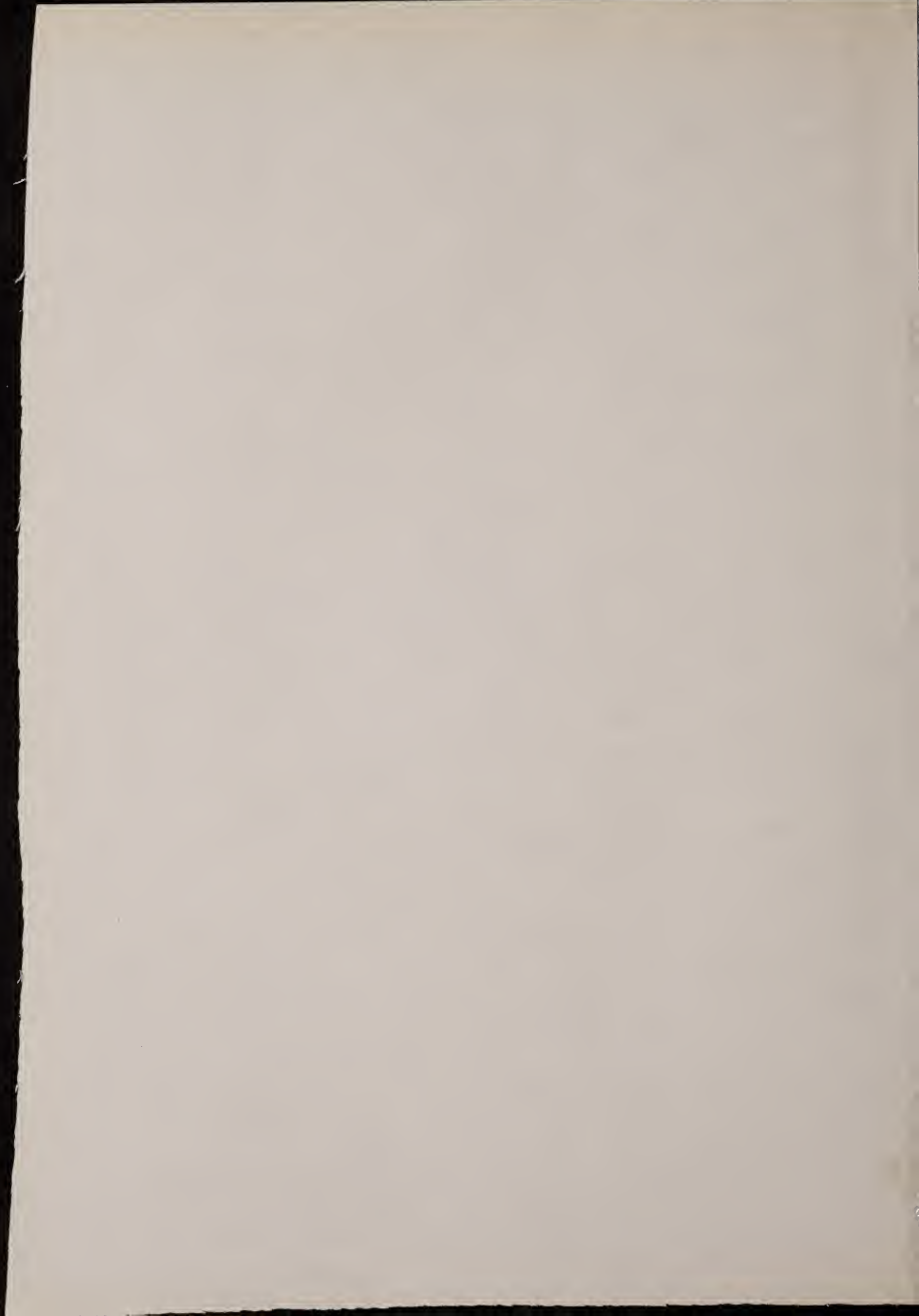
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Personality Adjustment for the Blind Child in the Classroom

We who work with impaired children have a greater obligation to help these children become integrated personalities than those who work with children with no impairment. This might seem at first to be an unusually strong statement, but on closer scrutiny of the factors involved, I am sure that you will agree that it is not. The term personality is vague and calls to mind different connotations to different people. For the purpose of this discussion personality refers to those traits or specific qualities of behavior organized into a definite pattern which determines the quality of the individual's total behavior. The potential of these specific qualities is present at birth, and develops through learning in connection with direct social contacts of the individual. Thus each individual learns to know and interpret himself through the status given him by society. Society, then, can foster for the individual healthy stable personality traits, or society can promote undesirable personality traits. Since the child begins life in the social realm of the family, the beginning emphasis of personality development is in the parent-home relationship.

□ A child who is wanted and accepted at birth and grows in an atmosphere of loving care and affection learns to feel quite differently about himself than a child who is rejected and neglected. A healthy, attractive, well-proportioned child is accepted quite differently from one who is not too pleasing to look at. Pretty children are frequently called by names of endearment, while those with physical defects are prone to be called "Fatty," "Skinny," "One Eye"; or those with personality defects are referred to as "Crybaby," "Sissy," "Bad Boy." A child with muscular control, who walks early and speaks clearly and well, wins acceptance from all, while a child who develops much more slowly is held in question.

The child learns early how people feel about his looks, his body build, and his general ability. These attitudes influence his feeling toward himself, which reflects the quality of behavior, and, in return, affects the development of a healthy, stable personality.

The feelings of parents toward their impaired child, regardless of the kind of impairment, can be described as desperate, confused, anxious, and guilty—desperate, because the future looks uncertain; confused, because of lack of knowledge of how to care for a child who has special needs; anxious, because of unknown problems; guilty, because of failure in themselves. From the very beginning the invaluable family-child relationship is strained and abnormal. Premature children must frequently have hospital care for weeks after birth, which prohibits early fondling. Children with over-developed eyes or no eyes at all are a source of embarrassment and disappoint-

INA W. KURZHALS

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Utah School for the Blind, Ogden.*

Attitudes Toward Children

The feelings of parents

ment. All of these factors play a distinct part in the behavior of parents. Some children are smothered with solicitude and never allowed enough freedom to become autonomous to any degree. Others are given lavish material things, but never experience love and affection. Still others are dealt with inconsistently by parents who love the child but hate the impairment. It is a rare parent who accepts his impaired child without reservation and considers him in the light of his potential.

The impairment itself limits the development of a functioning personality. Since this paper deals specifically with blindness, let us examine the basic limitations of being blind. The literature states the problems of blindness in some such fashion: restriction in the range and variety of experiences, restriction in the ability to get about, and restriction in the control of the environment and the self in relation to it. The problem of no vision has, however, much deeper implications than the above statements imply.

□ The last few years have brought attention to the fact that blind children have poor self-images. Davis¹ points out that a child who sees is able, through the use of his vision, to perceive that his mother and other individuals are not part of him. He thereby differentiates himself from the environment. At the same time that he is becoming aware that he is not a part of the environment, he is also becoming aware that he is a separate physical entity, that he can stimulate himself as he plays with his hands and with his toes. By doing so, he begins to develop a mental image of his own body structure. This image is referred to as body image. A satisfactory image of one's self gives a realistic idea of capabilities and limitations, so the internal motivation about one's physical and mental abilities is not distorted, and one can become an integrated personality. If one must perceive only through touch, it is not difficult to understand how slowly the process of self-realizing develops, if at all.

Another hindering factor, about which little has been written, is the complexity of the environment, which can so easily cause fear and anxiety for the blind child. It is one thing to hear the screeching, grinding noise of the cement truck or the blare of the siren and locate the source through vision, and it is quite another to merely hear the sound and become perplexed and concerned. When asked why a particular blind child froze with fear when being helped to pet a dog, the mother related the following incident, "While he was playing on the floor with a toy, a neighbor's dog ran into the room, jumped on the child, and began licking his face. The child became completely hysterical for a time."

Consider the traumatic experience for a young child of walking off the edge of a porch or falling into a deep hole. All of us have experienced pain as a result of running into partly open doors or falling over objects in our path. A most confusing situation is to enter a room in which there is a con-

Basic limitations of being blind

Self-Image of Blind Children

*Influence of environment
on blind children*

Frightening and confusing situations

1. Davis, Carl J. "Panel Discussion—Self-Concept in Blind Children: Development of the Self-Concept," *Proceedings of the 46th Meeting of the American Association of Instructors of the Blind* (1962), pp. 43-46.

glomeration of sound—TV going, and voices of varying quality laughing and carrying on conversations. To try to be a part of such a setting is difficult. The many personalities in the environment, each of whom has different expectations and a different way of making requests and giving directions, create a complicated situation, to say the least. Dad might tell the child to go over there and pick up the coat, while mother gets the object and hands it to the child. In the hurry and bustle of getting everything done and getting places, the blind child finds himself pushed here, pulled there, told to do this, or instructed to do that.

□ From this short discussion it is not difficult to understand the statement made at the beginning of this paper. We who work with impaired children have an enormous responsibility to help each and every one become a functioning individual important to himself and to others. The question is not whether a blind child is in a resource room, an itinerant program, or at a residential school, but whether or not the educational program in which the child is placed is going to fulfill his needs and assist him in becoming a satisfying individual to himself and to others. The remainder of this paper will deal with the kind of educational program which will set the climate in which each blind child can grow and develop those personality traits which will allow him to integrate pleasingly into society. There seem to me to be three important areas which deal with the educational program: the attitudes and understanding necessary for the teacher, the kind of environment in which to place the child, and specific teaching techniques.

□ Why does a teacher enter the field of special education? is an often asked question. There are, of course, many reasons, but to me only one seems to be legitimate. It is for the same purpose that an individual who is interested in developing and preserving the special talent and character of an individual is going to be interested in some phase of teaching. This person will teach very differently from one who is entering the profession to satisfy his own needs, or one who feels great martyrdom in working with the "poor" child. The teacher who sees each child as a unique individual with worth is never going to be satisfied with mediocrity. Hours will be spent in analyzing material, choosing interesting methods of presentation, and evaluating the results. No one book will ever suffice, but many sources will be used to enrich the lesson to the fullest. There will be concern for the personal meaning each child gets from material presented. Facts will be taught for the purpose of helping to improve the individual's thinking and not for a mere letter grade. There will be the understanding that only as the person interprets the material in terms of how he feels, and thinks, will it be of benefit to him. The important thing is not the accumulation of many new things to be recited verbatim, but the deep discovery of personal meaning in something the individual has some knowledge about. A blind child will never find complete personal satisfaction in any material unless he has had numerous experiences which give him a background for understanding and interpreting. Nor will he be able to understand and interpret unless the lesson is taught in such a way that what is said is clearly stated for him. There can be no

Personality Development and Social Integration

The Qualities of the Teacher

argument about the great amount of material to be taught, and often in the attempt to cover the magnitude of subject matter, ideas are presented so rapidly that not enough time is spent to insure that a concept is fully grasped. Every blind individual deserves the privilege of handling, exploring, questioning, and commenting until he feels some confidence in what is being taught. Better that a child learn only a bit, and feel good about it, than become confused about much.

Care will be exercised to make sure that ideas stressed can indeed be appreciated. A blind child on the back of a horse can sense fully the jogging motion, while his comprehension about the color and size of the horse need not be complete. Walking through fog and feeling moisture on the face to understand low hanging clouds is of much greater importance than long, descriptive scientific phrases about clouds. What makes a difference to a child with vision need not necessarily make the same kind of difference to one with no vision.

A teacher who has a genuine desire to help each child reach his potential, and who has insight into the kind of developmental lesson which will accomplish this, will experience many happy, exciting moments teaching blind children.

□ The term environment has broad implications and includes the emotional setting as well as the physical. One developed at the exclusion of the other results in problem classroom behavior. It is imperative that each teacher create a healthy emotional environment as well as an attractive physical one. It is not too difficult to improve the physical environment. Time and ingenuity can easily bring about interest centers, attractive bulletin boards, and pleasing physical features, but providing an emotional environment which brings security, a sense of belonging, and a strong desire to be a part of the physical environment is much more complicated.

Perhaps the first prerequisite is that a teacher take more than a passing interest in each individual. This personal interest involves a morning greeting, pointing out something of special interest, inviting a child to go on a particular errand, visiting with him during a spare moment, and complimenting him on the way he looks and performs. Becoming this involved gives the teacher an opportunity to learn about the interests and needs of each child and stresses the importance of individuality. With this background of information the physical environment can provide for each child something which helps him to feel important and happy in the thing he can do best. Thus, the boy or girl who enjoys music can work out tunes on the xylophone and piano. The child whose main interest is reading can go to the schoolroom library and select books meaningful to him. Children with some vision can visit the corner where colored paper, paints, and crayons are found. Very active children can find satisfaction hanging from the top of the room jungle gym and building with big blocks. The immature child can explore and work with various kinds of materials which help to develop finger dexterity. The tense, emotional child can work in sand, blow bubbles, enjoy water running over his hands. The child who becomes lonely can find com-

Choosing what to stress

The Environment

Personal interest in individual children

fort in dress-up and playing house. The children who enjoy expressing themselves can sing, dance, and tell stories.

In an environment in which there is something for each child, the teacher will have a much easier time helping children to be a part of group activities, and will have happier children portraying more mature behavior. And never will material be taught at the expense of the child.

□ The techniques the teacher uses to promote learning have a direct bearing on the chance the child has of becoming an adjusted personality. As previously stated, much depends on the teacher's own attitudes and understandings. Much also depends, however, on the knowledge and implementation of the ways in which children learn.

At times it is imperative that students work together in a total group situation. At other times small groups work together or the individual works alone with teacher guidance. Generally speaking, blind children need much individual help and support, particularly in the beginning grades. Helping the student to fulfill the assignment satisfactorily the first time is much less discouraging for him than repeated corrections of the same assignment.

To be kept alert and interested the learners must see some purpose in what is being taught. Purpose may be established in a variety of ways, but the important way is through teacher-pupil planning. Teachers who sincerely invite suggestions and decisions within limits from class members develop within the class the feeling of adequacy. This is quite different from students going through the actions on command.

In making assignments teachers can inquire of the learners what they need to do or what they need to study next that will be most helpful to them. Too frequently what the pupils do next is the following chapter or book, regardless of the learning from the previous assignment. Presenting material for the sake of material leaves many students in a quandary. It is not difficult to help boys and girls realize what they need to do to improve, if they feel security in the environment in which the learning takes place.

□ Learning takes time. A concept which the teacher thinks is simple and should be understood immediately might be most perplexing to the child. It is difficult for an individual with vision to realize how frustrating and confusing it is to function without the sense of sight. Impatience due to errors made is tragic to many impaired children. Errors must be expected and accepted. Students who make errors are not bad, and should not be punished by severe questioning or scoldings. A mistake is a cue to something not learned and is an excellent source from which to interpret further material for presentation.

There must be much comparison and recall of past experiences. It is difficult for blind children to understand likenesses and differences, to associate previous happenings with the present, and to transfer what has occurred in one situation to what has occurred in another. The quality of questions asked is an important device in helping the child to relate personally to information and to make associations. In fact, the technique of questioning plays a big part in any phase of teaching. Effective questions can help children to visualize what

Teaching Techniques

Individual attention

Teacher-pupil planning

Pupil-oriented assignments

The Uses of Error and Perplexity

Past learning and present learning

has been read, to interpret details that may have been overlooked, to extend and enrich meanings, to recall previous understandings, to ponder cause and effect, to itemize general terms into specifics, and to recognize the main idea of a selection.

The teacher who keeps the above in mind creates an atmosphere for developing thinking and deliberation, and testing becomes evaluation rather than mere pencil-paper response to something asked. Consistent evaluation needs to be done frequently for the sake of both teacher and child. The purposes of evaluation are to determine the stage of learning and the amount of progress, to reaffirm or adjust purposes, and to plan the next steps. If the pupil is helped to realize the above, the term "test" is not anxiety-ridden, and the child is helped to use what he has learned in real-life situations.

□ To teach is difficult, but to teach impaired children takes a special kind of dedication. With this closing thought comes a quote from Frederick J. Moffit, chief of the Bureau of Instructional Supervision, New York State Department of Education.

Day by day the child comes to know a little bit of what you know; to think a little bit of what you think; to understand your understanding. That which you dream, and believe, and are, in truth, becomes the child. As you perceive dully or clearly; as you think fuzzily or sharply; as you believe foolishly or wisely; as you dream drably or goldenly; as you bear false witness or tell the truth, thus a child learns.

The proper use of evaluation

"... thus a child learns."

International Symbol of Access for the Handicapped

The 2,000 participants at the 11th World Congress on Rehabilitation of the Disabled in Dublin voted to adopt an international symbol to denote buildings and facilities accessible and usable by the handicapped. Meeting in September 1969, the World Congress chose this symbol, a simple, stylized silhouette of a person seated in a wheelchair, for its simplicity and aesthetic qualities and its easy recognizability without explanatory text of any sort.

Miss Susanne Kofed, a Danish design student, originally contributed the symbol at the Scandinavian Design Seminar held in Stockholm in 1968 and it was later selected by a representative jury from eight countries for presentation to the World Congress. It is the hope of the Congress that this symbol, which is easily reproducible and therefore usable on a variety of sign and building materials, will be used throughout the world.



Is There a Need for a Specially Designed Reading Series for Beginning Blind Readers?

The material used to teach reading to blind children usually consists of brailled copies of the basal reading series sighted children use. Reading is taught in the same manner to blind children as to sighted children. However, reading braille is a slower process than reading visually. Therefore, the child's rate of acquiring information is slower. The basal reading series is the first experience a child will have with reading books. Up to this point the emphasis has been on listening activities and isolated word concepts. Now the child will have to read by himself. Braille will be used for the first time, new concepts will be introduced, and new words and word forms will be learned. This is the period when a foundation for all future school experiences is built. If special consideration is taken to develop an interesting and rewarding experience each time a new story is introduced, the child should develop an eagerness to read and an awareness of the information he has acquired.

Reading provides excitement, pleasure, knowledge, and intellectual development. The long leisure hours that a blind child may experience because of his handicap can be enriched by reading.

☐ Are the needs of blind children met by the materials now utilized? If not, a reading series should be designed that would be a more effective teaching instrument for teachers of the blind, kindergarten through third grade.

In an attempt to find an answer to this question, the author, during the 1967-68 school year, decided to survey a representative sample of teachers of blind children. The results of that survey follow.

A questionnaire was developed by surveying the current literature pertaining to the teaching of reading and braille in primary classes. The items on the questionnaire stimulated a substantial clear response, and the responses were reliable and reproducible. The questionnaire sought to determine teachers' opinions of the adequacies of the present primary reading program and the types of needs not currently being met. The subjects were canvassed by mail.

Of the 101 teachers who reported, 53 taught in residential schools; 11 were public school teachers, nine were private school teachers; eight were itinerant teachers; 12 were resource room teachers; and two were in an undefined category. There were six unanswered questionnaires.

☐ Of the 11 public school teachers who replied, seven expressed a need for a new reading series and four a negative opinion. In the private schools eight were in favor and one opposed. In the residential setting 35 teachers were in favor of a new reading series and 18 were opposed. Ten resource room teachers felt that the need for a special series does not exist. Two felt the series

ROBYN BLEIBERG

Miss Bleiberg is a program consultant with the American Foundation for Overseas Blind, New York City.

Are Presently Used Materials Adequate?

The survey questionnaire

The respondents

The Results

could be used. It is noteworthy that of the residential group the ratio was two to one in favor of new books. Based on an analysis of the teachers' reaction to three criteria of the available books, the greatest agreement was on the frequency of repetition, with 93.4 percent agreement.

Sixty-one, or 64.4 percent, of the teachers were in favor of a new series. Fifty-one, or 83.6 percent, expressed a dissatisfaction with the content of the series used in their setting. Fifty-five, or 90.2 percent, of the teachers polled felt that there was a visual emphasis in the series they used. The difficulties in the teaching of braille reading to blind children were rated in the following order, based on the majority of agreement of the respondents: 1) visual imagery, 2) contractions, 3) reversals, 4) frequency of errors, and 5) other. Fifty-seven or 93.4 percent felt that frequency of repetition is beneficial to beginning readers. The majority felt that three or more word repetitions would be advantageous.

Of the 34, or 35.6 percent, that were of the opinion that a new series of primers for blind children is not needed, 31, or 91.2 percent, felt that the series being used in their school was the best available. Three, or 8.8 percent, felt it was not. Twenty-eight, or 84.8 percent, felt that the series now being used in their classroom promoted better understanding of reading content and braille words; 33, or 97 percent, felt that this is beneficial to the learning of braille skills. The skills that repetition promotes were rated in the following order, based on the majority of agreement of the respondents: 1) word attack, 2) recognition of braille letters, 3) contractions, 4) comprehension, 5) other.

Of the total of 91 responses, 59, or 64.1 percent, felt that the braille reader should not differ from the series used by sighted children, and 33, or 35.9 percent, were of the opinion that it should. In the private school category, 87.5 percent of the teachers felt that the book should differ, whereas the majority of the itinerant and the resource categories felt it should not.

A majority, 69, or 76.0 percent, found a difference in text books for blind children a hindrance in a class for sighted children. Twenty-one, or 24.0 percent, did not.

Sixty-five, or 77.4 percent, of the respondents reported that they would use such a series of beginning readers in their classrooms, either as a basic reader or as a supplementary text. Nineteen, or 22.6 percent, did not feel that the series would be used. Eleven respondents did not answer this question.

Based on the responses to the question, the most widely used series in order of popularity were 1) Scott Foresman, 2) Ginn, 3) Row Peterson, 4) Lyons and Carnahan.

☐ Based on the data received in this survey, there does appear to be a need for a primary reading series for blind beginning readers. The author's analysis of the results indicates that the books presently in use do not meet the needs of blind children who are learning to read. The content of the books should have less emphasis on visual imagery and more emphasis on the senses that blind children use, e.g., touch, smell, hearing, and taste.

The blind child cannot be expected to understand fully all the meanings

64.4 percent favored a new series

Many were satisfied with books in use

77.4 percent would use new series

A New Series Is Needed

of elaborately drawn pictures and the visual implications stressed in each story. Because the books now available leave a good deal to the visual imagination of the children, the blind child's comprehension and enjoyment is greatly hindered.

The present series, written with the needs of sighted children in mind, do not use the contractions in an order of increasing difficulty. The contractions are used instead to correspond with the printed page.

The printed page in the reading series is written to teach and to reinforce visual symbols. These do not necessarily correspond to the problems present in the braille symbols, e.g., "Sally" as a braille word has a two cell contraction which is not a configuration that should be used on a beginning reading level for blind children. It is possible to teach this. However, for the blind child it negates all of the research that went into developing the primary reading series for sighted children.

The pupils should be introduced to the contractions that are easiest to read and write and then gradually progress to the lower sign contractions, initial letter contractions, and the final letter contractions. Repetition of the contractions should also be stressed.

In addition to this there are certain letters in braille that some children reverse when reading. Some of them are "d" and "f," "e" and "i," "h" and "j," and "w" and "r." The respondents were of the opinion that reversals caused a problem when teaching reading. This problem could be alleviated by careful presentation of material in a primer series.

The majority of respondents felt that repetition is beneficial when learning a new skill. A new word should be repeated at least three times in the story. By doing this the child will become familiar with the spelling of the word, the feel of the word, and its meaning.

The results of the study indicate the subjects who were satisfied with the books currently in use found the series they were using the best available. This series promoted better understanding of reading content and braille skills. The frequent repetition of words promoted good word attack, recognition of braille letters, knowledge of contractions, and comprehension.

A majority of the teachers who expressed a need for a new reading series felt that the book should differ from the reading book used by sighted children. The itinerant and resource teachers were not in favor of a different book. In these programs, integration with sighted peers is stressed in most, if not all activities. If a special book for the blind child were introduced it would be at the expense of the program's philosophy.

A different set of textbooks specifically organized for a blind child would present problems to the respondent teaching reading in a sighted class. But as the stress is currently on individualized reading programs, individualized braille programs using a specially designed reading series should not cause additional problems. The blind child should not have to learn to read a book just because it is used by his sighted classmates, but rather because it meets his individual needs and interests.

If such a new reading series were introduced, it would be used by the ma-

Unique problems in learning braille

Some braille letters are confusing to children

Most teaching is individualized

jority of respondents either as a basic reader or as a supplementary text. A print copy might also be a supplementary reader for sighted children.

□ In conclusion, the author believes that a study should be conducted to investigate how teachers of individualized reading or programming would accept a specially designed series of readers for blind children to determine whether the series would pose a problem in a class where individualized reading is part of the curriculum.

Further research should be conducted to investigate whether the satisfaction with the current reading series expressed by those subjects who teach in itinerant and resource settings bears a relationship either to a philosophy of total integration of the pupils or to the specific nature of the group which they teach.

Conclusions

Telephone Tape Service Provides News

The Massachusetts Association for the Blind, Boston, makes available to its clients a simple and relatively inexpensive telephone tape service that complements the normal channels that disseminate up-to-date and on-going community news. The service is similar to those in use in many communities for weather information, traffic reports, time, and various "dial-a ——" services. Clients call a special number and listen to a two or three-minute recording of notices of upcoming plays and concerts, advertisements of specials and sales at local supermarkets and department stores, weekly television schedules, and other items of community interest.

The entire service is arranged and operated through the telephone company. Tapes can be prepared and recorded in about an hour and so new tapes can be produced two or three times a week with little trouble. There is no extra charge for changing the tapes as often as is desired. An added feature is that out-of-the-way, low-income persons may take advantage of the service by calling collect, the call being charged to the office providing the service.

The services operated by the Massachusetts Association for the Blind, one in each of three offices, receive about 400 calls a week. Considering all the costs involved over a year, including rental of the service from the telephone company (about \$300 a year plus installation), the preparation and recording of tapes, and collect calls (very minimal), each call costs the Association about three cents. Greater use would, of course, reduce the costs and vice versa. Reaction of clients has been quite favorable.

Sailing — A New Experience

During the 1968-69 school year, a mobility program was initiated and developed in the Boston Public Schools. The program's results on the students were immediately noticed, and were of such a positive nature, that it was decided to continue the program through August 15, 1969.

As the mobility instructor, I wanted to enhance the program by adding some form of summer activity. Having taught sailing, and sailed a boat since the age of 12, I thought that if it were possible, this would provide an excellent and unique experience for these youngsters. Once the idea was approved by the school department, we had the immediate problem of locating a place where we could take the youngsters sailing.

□ As a member of the South Boston Yacht Club, I approached the chairman of the junior sailing program, explained my problem, and asked if the students could use the instructional facilities at the yacht club under my supervision. The chairman and committee-in-charge more than extended themselves to us, and we were allowed to participate in all planned activities.

The youngsters were introduced to the parts of a boat, and allowed to braille the hull, spars, and sails. Fortunately, we were able to use several different boats, starting with a small rowboat, graduating to a sailboat, specifically the *O'Day Sprite*, and as a final experience, the youngsters had the opportunity to sail a 30-foot sloop.

Sailing instruction was given on a one-to-one basis by the mobility instructor. Each child began the program by learning the parts of a rowboat, and then how to row. This gave emphasis to the various parts and how each functioned in controlling the rowboat. The children were taught to row, then were allowed to row with a sighted child, and when they reached a certain level of proficiency, they were allowed to solo in the rowboat. (The rowboat had a long painter* attached to it so that if the youngsters got into trouble they could be pulled back into the float.)

After passing the swimming tests, learning the parts of a rowboat, being able to row, and to tie certain knots, the youngsters were given the rank of "second mate."

Initially, we used a small sailboat which was pulled out of the water onto a large float. The youngsters were given the opportunity to learn the parts of the boat and their many functions. They were taught to rig the boat, and once this could be accomplished with some skill the boat went into the water, and true sailing experiences began.

* Painter—A line used to secure a boat to a float or dock.

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Yacht Club Cooperates in Summer Program

One-to-one-instruction

Swimming test required

□ Each youngster spent several hours with the sailing instructor learning the different points of sailing, specifically:

Run: wind behind you, sails out

Reach: wind perpendicular to the boat, sails partially trimmed

Beat: close hauled, sailing up wind, sails trimmed in

Come-about: pushing the tiller toward the sail

Jibe: pulling the tiller away from the sail

After an explanation of the points of sailing on a one-to-one basis, the youngsters were allowed to attend a shore school with the other students in the junior sailing program. Here the basic points were expanded to include more sophisticated considerations in sailing a boat with skill.

At this point, I found myself constructing a three-dimensional model to explore the different points of sailing. I also used a Sewell board and many other items we would group under tactile aids. Here we began to tie in, as I thought we would, all of the other senses.

Sailing, to me, is a sport that involves all of the senses. One hears the sound of the waves hitting the hull, or of the wind reacting to sail shapes and causing luff,* a distinct sound along the mast. Increased wind causes drive forward which one feels in the motion of the boat or in the increased pressure of the tiller reacting in his hand. The sense of touch is most important since the tiller will react to every change in sail and wind conditions.

Once the youngsters understood these fundamentals they began to develop into fine young sailors and by tying in the other senses we were able to create a situation where the youngsters' interest and power of concentration would prove itself.

To become "first-mate" a test was given that included identification of parts of the small sailboat, sails, and spars. Questions on wind conditions and the boat's relative position to the wind and a demonstration to the instructor of their proficiency in actually sailing a boat. After a youngster passed his first-mate's test he was allowed to sail with other youngsters in the program. Placing a sighted crew in the boat to warn of rocks or other hazardous things is perfectly logical since this is a normal crew function in any boat even if the skipper is not handicapped.

□ It was found that in most cases prior to this program, any blind or visually-handicapped youngster that had the opportunity to sail or go out on a boat went out for a ride and never had control of the boat. Thus we were providing our young skippers with an experience in responsibility and independence as well as a course in sailing. By keeping the methods of instruction centered around all of the other senses it was possible, in some cases, for these youngsters to progress faster than their sighted friends in the program.

All of the initial sailing instruction was given in the Yacht Club's 11-foot *O'Day Sprite*, but as a final activity the youngsters were given the opportunity to sail an International 210 which is a heavy 30-foot keel boat. The difference

* Luff—wrinkles and flutter on the leading edge of the sail when a boat is sailing too close to the direction of the wind.

Sailing Jargon Learned

Shore school instruction included



New Independence Achieved

Large sailboat eventually used

in size is considerable. The youngsters found it easier to sail the 210 than the *Sprite*, claiming that they could feel the boat better through the tiller. To a sailor, this makes sense as the 210 has a balanced rudder that is extremely sensitive. The *Sprite* is a fine training boat but does not have the size, weight, or feel that the 210 possesses.

From the mobility instructor's viewpoint, the summer of sailing was a most profitable one. The youngsters progressed noticeably in the use of their remaining senses, confidence, independence, and socialization. The youngsters thoroughly enjoyed their new-found sport and took great pride in their ability to be masters of their own ships.

The In-Flight Use of Portable Tape Recorders

Many blind persons who travel by air, whether for business or pleasure, wish to make use of the time in transit for reading or for dictating correspondence by using portable tape recorders or similar devices. Often, however, use of such equipment is prohibited by airline personnel who cite a Federal Aviation Administration safety regulation, notice of which is usually posted in aircraft and in airline terminals. *The New Outlook* has looked into this situation and received the following clarification.

Federal Aviation Regulation 91.19 on portable electronic devices prohibits the use by passengers of portable FM radios and television receivers aboard aircraft in flight or on the ground. Radiated signals from such devices can interfere with the air-to-ground communications of the aircraft. FAR 91.19 does not specifically prohibit the use of portable tape recorders.

"However," says T. J. Cymmer, principal electronics inspector, Kennedy Air Carrier District Office No. 31, Federal Aviation Administration, "in the past, some airlines have experienced problems in the aircraft compass systems, which really has nothing to do with radiated signals, but is affected by magnetic field disturbances. The magnetic field disturbances were found to be caused by the permanent magnet of speakers, such as used in portable radios, tape recorders, and the like."

Clearly, then, it is understandable that the airlines are extremely cautious about anything that might interfere with the proper operation of the navigation systems of their aircraft. Further, it is also understandable that the airlines would have a general policy of not allowing potentially disruptive equipment to be used.

What alternatives, then, are left to the blind person? Mr. Cymmer suggests that blind persons "contact the airline in person and explain their reason; the airline may, through discriminate passenger seating, make an exception to their internal policy."

I Give I.Q. Tests Without Looking

The idea of a school psychologist being blind evokes a variety of responses, depending largely on a person's attitudes towards blindness. Further, since there have been no blind school psychologists before my certification, it might lead one to believe that this field is not a realistic one for the visually handicapped. I look upon my own blindness as neither a deterrent nor a help in my functioning as a school psychologist. The function of a psychologist, of course, cannot be narrowly defined because in this field one must draw together a wide range of experiences, most of which are closely related to other fields.

□ The preparation of a school psychologist is long and difficult. Aside from possessing appropriate personality characteristics and intellectual abilities, the would-be school psychologist must complete extensive course work. He must also have a rich background in dealing with people, since people are the focal point of the psychologist's concern. Finally, a clinical internship, carried out under the supervision of a certified psychologist, is the last step in this tedious, but rewarding, journey. The visually impaired person who is training to become a psychologist must additionally possess those independent living skills that anyone, blind or sighted, must possess. Here, as in many vocations, the better a visually impaired person has adjusted to his own disability, the easier it will be for him to succeed on the job.

A fundamental area of concern for the school psychologist is that of psychometric procedures and results. I knew that this area would require more adaptation than any other single area. The question was, how could I, without vision, obtain the same results and interpretations in the administration of an individual intelligence test, as someone with vision? With great assurance I can now say that it is possible, and I would like to discuss some of the adaptations I have made in testing procedures, as well as a few other insights I have received working as a school psychology intern.

Five years before my actual internship began, I had completed the course work to meet the requirements in school psychology. With the courses out of the way, therefore, the next step was to secure an internship. I applied to more than 100 school districts in New York, stating in each application that I was legally blind. None of these applications led to my being hired. In fact, I could not even manage to secure an interview. The overwhelming evidence in this case seemed to indicate that school systems are reluctant to have a blind school psychology intern.

I knew from the beginning that the goal of being a school psychologist was going to be a difficult one to attain. The odds were overwhelmingly

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Preparation of a School Psychologist

Psychometric procedures and results

Securing an internship was difficult

against me. Experienced persons with whom I consulted told me that it was possible to be a blind school psychologist, but that I would have to make some adjustments.

□ With my course work out of the way, 36 dollars in the bank, and no internship in sight, my family and I moved to Dutchess County. There, I accepted a position as teacher of the visually handicapped, an area in which I am certified to teach. I was teaching in this position when I once again made application for the long-awaited internship. Having worked in Wappingers Falls three days a week for a year, the district had had an opportunity to know me as a professional and not merely as a "blind man." The internship was almost immediately granted and arrangements with the State Education Department were completed so that I could begin working. Because they knew the applicant personally, the people of Wappingers Falls had been able to cast aside their stereotyped ideas about blindness and to evaluate the applicant on the basis of his ability rather than his disability. Unfortunately, school systems do not often have this opportunity.

Success

The Wappingers Falls Central School District No. 1, the largest central school district in New York, is made up of 14 elementary schools, two junior high schools, and two senior high schools. In the psychology department there are five certified school psychologists, one full-time secretary, and the responsibility for untold numbers of tests and measurements. Prior to my appointment for the school year 1968-1969, Wappingers Falls had never employed a school psychology intern.

The school district

As mentioned above, the area in which a blind psychologist must expect to have the most trouble is psychometrics. It is easy to see how a blind person might conduct interviews and write reports, but how does he administer, score, and interpret tests in which the subjects are sighted children?

Apart from the training and experience needed to prepare for an internship, I had to consider what special tools I would need and what special adaptations of materials I would have to make. I had anticipated a wait of eight months before beginning my internship, but the assistant district superintendent wanted me to begin at once. I agreed to do so despite the fact that I did not really have all the materials prepared that I had felt I would need to function adequately. As it turned out, however, there was no great need for special materials. As a rule, I brailled the tests I was going to use and a volunteer group brailled all the tables of raw scores that had to be converted to scaled scores.

Special tools and adaptations

□ As I began to think about the specific problems I would face in my new job, my first concern was how the children would react to being tested by a blind psychologist, and how readily they would adjust to the special techniques I would be using. I realized that I could not, any more than a sighted examiner, hope to predict with complete certainty, much less to control, the spontaneous reactions of the children. I hoped, however, to find ways of making their adjustment easier.

Reactions of Children

For example, my subjects would have to get used to the fact that, while I employ script for some purposes, I take most of my notes in braille. This

would, I realized, arouse their curiosity and, because braille would be unfamiliar to them, perhaps make them slightly afraid of it. I found, however, that as I got into the work of administering the tests, I could satisfy their curiosity simply by showing them how braille works and then letting them see how their names look written in braille.

I was also concerned with the standardization of testing. It must be pointed out that what is standardized in giving a test is the responses of the subjects and not the method by which the test is given. The technique for administering a test is, of course, a significant factor, but I contend that the same responses are elicited whether a test is given by reading the instructions and questions from print or from braille. No matter what technique is used, however, it must be done with ease and accuracy. I raise the question of the relationship of my techniques to the subject's responses only because I have found it to be a prime concern of people who are reluctant to accept the idea that a blind person can be a psychometrician. This is similar to the reservations of many people regarding the effectiveness of a blind teacher. It is usually assumed that there is some correlation between blindness and children's behavior. That the personality and competence of the teacher, visually impaired or not, is of far greater influence on how children function in school is seldom considered.

I would not want to lead the reader to believe that tests are given without alteration. The Columbia Test of Mental Maturity, used to measure the perceptual age of children, is a good example. This test can be non-verbal, that is, the child need not be able to talk to take the test, but merely to point with his finger to the object that does not belong in a group on each of 100 cards. I, however, instruct each child that, when he has found the object that does not belong, he is to count from left to right and tell me the number of it. For example, if there are five objects on the card and the middle object does not belong, the child should count "one, two, three" from left to right, and say "three." I score the child's responses from a brailled score sheet that lists the correct responses. I have had no experience with non-verbal children or with children who are unable to count. If I did, I would use a reader who would state the number of the child's choice without interpretation.

□ I would like to discuss in detail one individual I.Q. test, the Weschler Intelligence Scale for Children (WISC), and the adaptations that I have made in it. I have also adapted the Stanford-Binet Intelligence Test, but I have worked the longest with the WISC.

The WISC is divided into two sections, verbal and performance. Admittedly, the verbal portion has required fewer changes than the performance has. In both sections, however, I can administer all six sub-sections. I imagine that with enough experience in administering the verbal tests that the entire battery could be recalled from memory. Probably this is true for sighted examiners as well.

Before the actual examination, I obtain necessary standard data in the conventional way. I merely ask the appropriate questions, at first using a braille list but now from memory, and record the responses in braille. For

Standardization of tests

Altering and adapting tests

Adapting the W.I.S.C.

Recording the responses

the most part, the questions for each of the verbal parts of the test (information, comprehension, arithmetic, similarities, vocabulary, and digit span) are transcribed into braille. The question is read to the subject as prescribed. At first I wrote down the entire response and scored it at a later time. After a few weeks I began using only one word to recall the answer and scored it immediately. I do, however, write down the entire response for the comprehension and vocabulary sections, since these sections are used as projective tools. I also write a brief statement following each sub-section with respect to response patterns and significant behavior. I feel most comfortable using a slate and stylus, but a braille is much faster. The braille is, however, more of a distraction and I always have to wait until the subject is finished speaking before writing anything in order not to interfere with his natural response patterns. In a few cases, though, older students will often speak in phrases giving me an opportunity to note their response. This in itself is of diagnostic value and is noted. Again, such subjects would probably show the same consideration with someone using a pen.

Using the WISC scoring sheet offered an interesting problem. At first I dictated all the responses to a reader who would copy them in the appropriate spaces. The score sheet was then the same as that of a sighted psychologist. This was, however, a time-consuming project to say the least. I now dictate only the raw scores, scaled scores, verbal performance, and full scale I.Q. scores. All of this information I obtain for myself with braille tables. Two sections of the performance section, however, still need the aid of a reader: the mazes and the coding. I also type out the responses in the comprehension and vocabulary sections on a separate sheet of paper, along with the rest of my notes. This provides enough information to a sighted psychologist who might need it in the future. A notation is made on the score sheet telling where the remainder of the answers can be found if they are needed.

□ The use of creativity on the job, especially by a visually handicapped person, can produce significant improvements not only in performance but also in results. In solving problems, for example, the simplest solution is often overlooked merely because it is not a conventional solution. Any solution that works, however, can and should be used. My adaptations for the performance sections of the WISC will illustrate this approach.

In the picture completion test I have to have a thorough understanding of what is in each picture, and exactly what is missing and from where. If the child does not know the name of the missing part, I have to determine from his description if he is really responding correctly. If I am at all unsure I ask the child to put my finger on one like it, if there is one like it in the room, for example, a fingernail, a hinge. I have found, however, that if a child is perceptually aware enough to find the missing part, he is also verbal enough to describe it.

The picture arrangements section was fairly simple to adapt. It consists of several series of pictures which must be arranged to tell a story. Again, I have to know the contents of each story and of each picture within the story. There is a code number and letter on the back of each picture for scoring pur-

Scoring and written evaluations

Creative Solutions to Problems

Picture completion sub-test

Picture arrangement sub-test

poses. All I have to do, therefore, is read the code and record the time. This test is also used for projective purposes.

The block design section was fascinating to solve, and the results are rather interesting. The subject must arrange blocks to coincide with a pattern he sees in a two-dimensional rendering. The Kohs blocks, which are used in this section of the WISC, were adapted from the Ohwaki Tactile Block Design Intelligence Test for the Blind. This test became the Ohwaki-Kohs Tactile Block Design Intelligence Test, which in turn was revised and is now known as the Stanford-Ohwaki-Kohs Tactile Block Design Intelligence Test. Although Kohs used the Ohwaki blocks in the WISC, the designs are not the same. At any rate, I use the Ohwaki blocks which can be identified both tactually and visually and which correspond with the WISC designs. One slight disadvantage is that color blindness can be detected with the Kohs blocks but not with the Ohwaki blocks.

Block design sub-test

The object assembly section was perhaps the most difficult to accommodate, and the result is more time-consuming to administer than the other sections. This sub-test is a series of four puzzles, each with one more part than the previous one. The puzzle parts are to be arranged in a prescribed position before the subject begins the arrangement. I use a tracing made with a raised-line drawing kit to prearrange the puzzle parts. I can then merely slide them off onto the testing area. By the time this test is given the subject child is usually accustomed to my not using vision and will tell me when he is finished. I stop the stopwatch and tactually explore the puzzle arrangement. If satisfied, I record the time and then press a piece of adhesive cardboard (which I made) down on top of the puzzle. I can then look at it more closely later on and change the score if necessary.

Object assembly sub-test

Coding is a timed test in which the examiner is to point to various parts of a page and the subject is to copy simple designs. At first, I used a duplicate page with raised dots on it to indicate where I was to point. I found later, however, that it is just as effective, perhaps even more so, to give a verbal description of what the subject is to do.

Coding sub-test

In the mazes sub-test, the subject is to draw a line from the center of a maze to the outside. I do the same thing here as I do with the coding sub-test. When the sighted psychologist sees a child going through a wall in the maze, he is supposed to say, "You can't go through a wall, can you?" It would appear, therefore, that a blind examiner would be at a tremendous disadvantage, but it is easy to tell when a child is going through a wall just by listening to him.

□ These techniques demonstrate that many psychometric instruments can be used by blind psychologists. I think that with an understanding of the needs of the client, along with some ingenuity, most problems in testing without sight can be overcome. There are some tests, however, that can not, and should not, be adapted by such a person and this limitation should be readily accepted. With the proverbial skinning of the cat in mind, one test can often be substituted for another in diagnosing a learning or mental disorder. The use of specific examinations does in fact vary. In a school district with more

Not All Tests Can Be Adapted

than one psychologist, the test that cannot be given by the blind examiner can always be given by someone else.

Looking in retrospect at the experiences of my internship, I can see that a few of my ideas were greatly reinforced. For example, in the relationship between a child and a psychologist, it is the response of the child in which I am most interested. Visual clues to the child's functioning are important, but secondary, for while they might indicate patterns of behavior to the psychologist, they might also bias him. Regarding visible functioning, I have found it useful to employ persons who can accurately report what they see. With much searching, and again much persistence, I have found such persons who were willing not to interpret what they see, but only to report it. I find this especially helpful when making observations in kindergartens and the lower grades. I also use this technique when deducing mental age scores from the Draw-A-Person Test. This particular test, when used as a projective technique, needs no response other than that of the child who drew the picture. Again, it is the child's interpretations which are the most valuable for me.

□ Briefly stated, my own feelings about testing are that this country has a surfeit of testing; far too many numbers, especially considering the significance that teachers attach to them, are reduced from intelligence tests. I prefer to use an I.Q. test to determine a child's strengths and weaknesses, to determine the areas of cognition in which he finds difficulty, and to discover those in which he excels. Yet time and time again teachers will scan the psychological report just to pick out the student's "number." This certainly compromises the child's integrity and is most unfair to him. I don't think we question these practices often enough. We are led to believe that intellectual factors are the most vital in succeeding in this world. If we do not seek to develop good self-concepts in our children, education will then be a waste of time.

Perhaps that aspect of my internship that was the most responsible for the emergence of my own techniques was the general atmosphere in which it was pursued. My supervising psychologist, Carl Bryson, was, of course, largely responsible for this. I was given the responsibility for doing my own work from the beginning and for resolving any difficulties that arose. Carl was always there and was always willing to answer my questions, but he never inflicted his own methods or philosophy on me. This was particularly significant for me, I think, because many of the techniques I use are necessarily unconventional. I could not have been successful in a rigid atmosphere. In the five schools in the district in which I worked I was delighted also with the cooperation I received.

I have nothing to say "in conclusion" or "in summary" except that as a result of my internship, I now find myself thinking as a psychologist, while beforehand I thought of myself as a blind psychologist.

Relationship between child and psychologist

The Role of Testing

Cooperation was important in internship

Utilization of Standards and Accreditation

Because we tend to think of standards and accreditation as ready-made documents and programs which have suddenly appeared in our midst, we may think it all began with the Commission on the Accreditation of Rehabilitation Facilities and the National Accreditation Council.

Certainly, standards have been effectively and constructively utilized by both these organizations and the many agencies which have already sought and achieved accreditation, or which are now using the documents for self-study prior to applying for on-site surveys. The idea of standards and accreditation has, however, been utilized and has been exerting a positive influence on programs for many, many years.

□ Out of a conference at Bedford Springs, Pa., in 1958 came a decision to try to develop standards for workshops. Because National Association of Sheltered Workshops and Homebound Programs (NASWHP) was then just a name rather than the dynamic force it is today, E. B. Whitten, as he so often has done over the years for many organizations and causes in which he believed, applied for and received a grant to be administered by the National Rehabilitation Association (NRA) and NASWHP. NASWHP was to work toward the goal establishing standards for workshops, using as a vehicle, the National Institute on Workshop Standards, with its own board assuming primary responsibility for directing the Institute's mission.

One very early activity of the Institute was the sponsorship of at least three meetings, one in the east, one in the south, and one in the far west, to which were invited the "who's who" of the workshop field, as well as top people from other groups such as NRA, Vocational Rehabilitation Agency, etc. I believe that it was here that the positive influence of standards really began to filter out to the field.

Following these meetings, out of which came valuable guidelines for standards development, many of these top-flight leaders became deeply involved in the affairs of the Institute as board members and officers, and as committee members.

These people were the kind of leaders whose abilities, interests, and willingness to work dictated that they would be playing key roles in a broad variety of other organizations, both local and national. They were the people to whom others listened. As they listened, they began to hear more and more about standards. Countless people other than those closely associated with the Institute began to think about their own programs, clients, staff, and facilities.

This paper has been adapted from an address Mr. Johnson gave at the 1969 National Institute on Standards and Accreditation for Rehabilitation Facilities in Hot Springs, Arkansas.

J. ARTHUR JOHNSON

Mr. Johnson is executive director of the Columbia Lighthouse for the Blind, Washington, D.C.

The First Step

Meetings of workshop personnel

They began to recognize the value of the development of more objective methods by which they could evaluate for themselves the various ingredients which went into their respective services. They began, even as the very first tentative standards were being formulated, to seriously consider ways in which they could improve their own programs. Other important groups in the field also began to think about standards in relationship to their activities and to the programs with which they were involved.

Charles Caniff and the Association of Rehabilitation Centers (ARC) membership watched with interest the activity of the National Institute and decided that standards could be helpful in expanding and improving the varied programs of service carried on by ARC member agencies. Soon that group was hard at work on a set of standards for rehabilitation centers.

Association of Rehabilitation Centers

The General Council of Workshops for the Blind, with encouragement and assistance from National Industries for the Blind, and on a voluntary basis without benefit of grants, had a committee working by 1962, which by 1964 had developed a set of standards for workshops for the blind. The Council accepted these in October of 1964. Thus an important segment of the workshop movement had blazed a trail well ahead of other groups.

The Commission on Standards and Accreditation (Comstac) began its work in 1963, and had 121 top flight persons from within and outside the field of work for the blind developing standards for use in this field. These standards were introduced to the field in late 1965.

On January 1, 1966, the National Accreditation Council for Agencies Serving the Blind (NAC) succeeded Comstac which had completed its mission with the introduction of standards in late 1965. Since that time the original General Council standards and NAC standards have been consolidated and the NAC standards are now the one set of standards for workshops for the blind, substantially reflecting the content of the standards originally accepted by the Council in 1964.

National Accreditation Council

With the passage of the 1965 rehabilitation amendments, standards and criteria became matters of vital concern to the then VRA. In setting up criteria now applied in connection with training grants the federal office drew heavily on the documents developed by ARC, NASWHP, NAC, and the General Council which by then were well along or already completed. I can't help but feel that this was good for the whole field.

It is clear that as various groups developed standards, more people and agencies in these groups became involved, and as they did, the messages regarding standards were more widely heard, listened to, and acted upon.

During the earliest development of the standards for workshops by the National Institute as far back as 1960-61, agencies were asked to field test various small segments and to react with comments. Even then, years before the formation of CARF or NAC, or before accreditation was much more than a rather remote idea, shop people who field-tested would report back about some positive step they had taken because some proposed standards had made them think that improvement could be accomplished. Invaluable suggestions were

Agencies cooperated in testing standards

made by these people who agreed to field test, with the result that the present standards reflect to a substantial degree the thinking of many of the knowledgeable people in the field.

Conversely, many programs today reflect the positive changes and improvements made voluntarily by directors over the years since they first began learning about standards.

This sort of action has been noted during development of standards by various groups, and of course has been accelerated since NAC and CARF began accrediting, and agencies have been conducting self-studies.

□ There are some specific examples of how the standards have had a long time positive influence almost from the time they were little more than a good idea. Some I have observed first hand, others have been told to me. Those which I've been told about were, of course, minus names of agencies or persons.

In development of the initial draft of the library service standards by Comstac, a librarian who was asked to comment was successful in persuading the governing group that additional funds for program expansion and improvement then would result in greater likelihood of meeting standards for accreditation a few years thereafter. She got the additional funds.

An agency long looked upon as one of the best of its kind got its board deeply involved in various aspects of self-study. The result was that after 50 years of self-perpetuation, the board voluntarily decided to provide for rotation.

A state-operated workshop received a large appropriation for a substantial new addition. The manager of the shop, with the approval of his superiors, took the workshop standards to the state's architect prior to the start of drawing plans, and was able to have many items called for in the standards built into the facility. The cost of including them was negligible. This was as long ago as 1964-65 and application of workshop standards now might mean expensive modification of a relatively new facility had the standards not been used in designing it.

Surprisingly, in this day of safety consciousness when building and occupancy codes are quite rigid, when the services of safety engineers are free for the asking, and when local fire marshalls and civil defense people will inspect premises and help set up fire drills and disaster plans, many agencies apparently have given this aspect of their operations a low or no priority.

Fortunately, it appears that the self-study process has forcefully called this shortcoming to the attention of many agency executives and board members, since evidence during on-site visits indicates that very recent attention has been directed at improving in this vital area. It still, however, is an area which has been one of the most frequent causes of criticism on the part of field teams.

For many years in the field of work for the blind, and in agencies doing similar work with sighted persons, agencies were paternalistic. Blind people were "our poor blind people" and it was felt that the dear ladies on the board were the only people capable of deciding what was best. This usually meant birthday parties, weaving useless baskets, making lousy potholders for which there was no market, and generally having clients participate in fruitless ac-

The Positive Influence of Standards

Attention called to safety

Paternalism combatted indirectly

tivities. It never dawned on people that with constructive services, blind people could really function very well and quite independently.

When supervisory or administrative openings occurred within the agency it was natural for the do-gooders to single out the blind man or handicapped man who had always been *such* a nice fellow, and who had been around for *ever* so many years. He certainly had to be recognized and rewarded.

This in many agencies was the only requirement for him to become a supervisor or a director. Technical or professional qualifications really weren't considered to be necessary.

□ In this area, knowledge of what standards were shooting for has influenced decisions on staffing. Qualifications for people have been upgraded, salary scales have been improving. Professionally and technically qualified persons have been hired for jobs which they'd never before been asked to fill.

In all honesty though, I would have to admit that these moves began before 1958, but they have surely accelerated in the last ten years, and to an even greater extent since agencies began doing self-studies.

The soul-searching that an honest and sincere self-study requires has had other positive effects beyond those already mentioned.

An executive director, trying to build a progressive and sound program, recognized that as a throw back to olden days, he had a "recreation program" that wasn't worth a plugged nickel. But, some old timers on the agency board whose baby this program was, looked upon it with proprietary interest and considered it as a terrific program that clients just could not do without. The executive could not buck the tide—the program went on and on.

During self-study it became apparent to the board that in truth the program really was not what they wanted to think it was and they faced up to this fact by discontinuing it.

Another organization had so frequently claimed that it had a good program of a highly specialized type that the executive director and board truly believed that the agency had such a program. In reality it was a very poor one. Self-study caused the lights to go on, and the agency now in fact does have an excellent program because it accepted the standards and hired qualified personnel to provide the service.

These are but a few of many examples of how standards have in fact been effectively used and have had a positive influence on many of our programs and facilities for a long period of time.

I am sure that both Alexander Handel and Charles Caniff and their staffs and field consultants could add many more.

The interesting and encouraging part of this is that so much happened on a voluntary basis over a long period of time without the matter of accreditation serving as a whip to force people to move.

One job which I think needs to be done now if maximum effective future use is to be made of standards and of accreditation, is to get the message across that, far from being the threat which so many people seem to feel they are, standards are working tools that can be invaluable to an agency director in building what he chooses to build.

Staffing Policies Have Been Influenced

Standards provide new perspectives

Changes are often made voluntarily

No agency directors who were concerned with any of the examples mentioned have lost their jobs, or have found that their boards are antagonistic because standards were used to expedite positive action.

On the contrary, programs and facilities have been improved, board involvement has resulted in a higher degree of interest and pride on the part of members, and probably many directors are, in the eyes of their board members, better directors than they were previously.

This, of course, is not so. These directors are really the same able guys, but effective use of these tools helped them do what they couldn't do alone.

□ The time is here when foundations and federal and state agencies will increasingly expect that rehabilitation facilities prove through earning accreditation that their staffs, facilities, and programs meet accepted standards. I'm sure that no one would seriously argue the premise that, in general, the accredited agency is more likely to provide services of a higher quality than the one which does not meet the standards. Accredited status of an agency is likely to become the main criteria for grants and any purchases of services by state and federal agencies.

The general public, which so generously supports so many of our facilities, surely will continue to respond, perhaps even more generously, if we present them with the evidence through becoming accredited that we are truly concerned about making their investment a sound one.

I suspect that United Givers' funds around the country might be easier to persuade regarding budgets with the accreditation certificate in your hand. One agency was informally and unofficially told by a representative of the local fund that it should stand a good chance of getting approval of survey costs in its budget.

Since we have spoken mainly about bricks and concrete, equipment and qualifications of staff in relationship to standards, it may have sounded as though rehabilitation facilities exist so that we can "point with pride" to the excellent facilities, equipment, and qualified staff.

□ To be sure, we should take pride in our agencies when they do meet the standards, but it is those served who stand to benefit most from any effort which may improve the quality of the services they receive. This is a point we must never overlook.

It is the clients, and what happens to them, rather than the facility or the number of Ph.D.'s on the staff.

It is the extent to which the client's needs have been met or the degree to which his problems have been solved.

It is the extent to which the client's independence has been restored.

It is the level of acceptance of the disabled individual by his family, friends, and community after he has received our services.

These are but a few among many client-related reasons, which are the *only* justifiable reasons for the establishment or continued existence of rehabilitation facilities. These are reasons which unfortunately sometimes

**Accreditation Will Be Expected
by Governmental Agencies**

Fund-raising aided

Clients Benefit the Most

seem to be assigned lower priority in favor of fancy fronts on our buildings. Even with the advantages of the increased objectivity which standards provide in our efforts to evaluate and improve facilities, staff, and programs, standards are only partially completed, and a bigger and more difficult job lies ahead. We cannot rest on the laurels which the development and implementation of the present standards have earned for us. I believe that the next and probably the most significant of all the developments in the field of standards lies in the very difficult area of objective evaluation of the outcome of services to clients.

Are these people really better off because they came to a modern, safe, well-equipped facility, where highly trained technical and professional personnel planned and applied a well-executed program of services? We think they are, and this is undoubtedly true—but how do we know? How can we be sure? What are we doing to check ourselves out?

☐ Let's effectively use today's standards and the accreditation process as the springboard from which we jump into the more important part of the job. Let's find a way to clearly determine "*How are we doing?*" Only when we can clearly demonstrate beyond any doubt through development and application of objective measuring sticks that the products we turn out are in fact better ones than those with which we started, can we say "*We're doing just fine!*"

How Are We Really Doing?

AVID, A Telephone Reader Service in Atlanta

A three-year research and demonstration project in the Atlanta Public Schools will investigate the effectiveness of reading educational materials to visually handicapped students over the telephone. The project, known as AVID, will operate on federal and local funds totalling \$362,000 and will provide service to registered kindergarten to 12th grade students in two city and four county school systems. The telephone center will have a core library of its own and will have access to several nearby city, school, and college libraries. Materials not available in braille or large type will be read over the telephone in response to requests from visually handicapped students.

The director of the project, Arthur Lown, Ed.D., of the Instructional Services Center, Atlanta Public Schools, anticipates that the students will benefit in at least four ways from the project: Acceleration, Variety, Immediacy, and Dignity. (From these four benefits, also, is derived the acronym AVID.) Because the reading rate of the sighted reader is about 175 word per minute compared to the average student rates of 86 w.p.m. for reading braille and

90 w.p.m. for large type, the service will provide an accelerated reading rate. In addition, material can be tape recorded, as time permits, and compressed to 275 w.p.m. or more. The variety of material available to the student will approach that of his sighted classmates. Not only textbooks but periodicals and a variety of reference tools will also be readily available. The service will also be able to provide immediate service. In most cases the student request will be fulfilled on the spot or, if the material is not in the telephone center, the call will be returned in a short time. Delays in other services due to students changing schools or classes, to mail delivery and volunteer transcribing, to the geographical limitations of itinerant teachers, and to delivery of materials from sources outside of Atlanta can thus be avoided. The dignity of the student is preserved because he will no longer need to ask for reading as a favor of family or friends.

County-wide Telephone Network for Information on Services for the Aging

Westchester County, New York, just north of New York City, has a large population of older people spread over 453 square miles of city and rural areas, including 46 separate political subdivisions. Serving this area are more than 500 health and welfare agencies, both public and private. For those seniors in need of services, this situation, until a few years ago, was often quite bewildering.

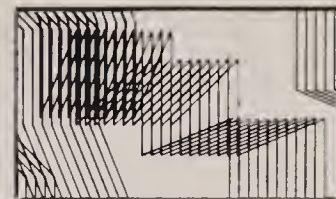
A solution to the problem came out of a recommendation made by an ad hoc committee on health services which was formed by three major health and welfare agencies in Westchester in 1965. One recommendation of the committee called for the establishment of an information and referral service. Using a federal-state grant, funded under provisions of the Older Americans Act, the problems of such a service were investigated.

As a result, in 1967, the Senior Information and Referral Service (SIRS) was established. SIRS is conducted by the Westchester Council of Social Agencies, White Plains. To insure easy access to the service, a county-wide telephone network was established through which SIRS could be dialed directly from anywhere in the county at the cost of only one local call. This was accomplished by arranging for the telephone company to install four trunk lines from the project office in White Plains to four other cities located in four different geographical areas of the county.

SIRS was advertised widely throughout the county and has enjoyed a great measure of success. Of all inquiries made 85 percent came in over the telephone network. SIRS serves more than 250 persons in an average month.

Answers to Accreditation Questions

National Accreditation Council for Agencies
Serving the Blind and Visually Handicapped



Q. As the director of a sheltered workshop I have a copy of the Self-Study and Evaluation Guide for Sheltered Workshops. Should I buy additional copies of this book for all those involved in our self-study?

A. No. Sections of the *Guide* are sold separately and, therefore, we suggest that you order for each person only the section or sections that relate to his concerns. This will save you money and provide materials that are easier to use. If you wish, you can also use the sections, rather than the complete volume, for filing your report.

In any case, please don't try to do the job with *only* the one-volume *Guide*! Do order the sections that apply to your operation. In addition, if you offer more than workshop services, be sure to check the sections of the general *Guide* to see which you will need, and order them.

Q. I am the executive of an agency interested in qualifying for accreditation. How do I start?

A. 1. Write for the NAC publications list, if you don't have it.

2. From the list, order a copy of the *Self-Study and Evaluation Guide* that applies to your agency. Since yours is a multipurpose agency, you would need the general *Guide*.

3. Read the *Guide* carefully. The "Manual of Procedures" at the beginning of the *Guide* outlines the procedures for accreditation, tells how to conduct an agency self-study, what to expect from the on-site review, and how to begin putting into action the findings of the self-study. The rest of the *Guide* introduces the standards. The sheets are set up so they can be used as worksheets by your study committee as it measures each phase of your operations against the standards.

4. Begin to follow the procedures outlined in the Manual. Involve all appropriate volunteer and professional personnel and make sure the appropriate sections of the *Guide* are available for their use. (See question and answer above.)

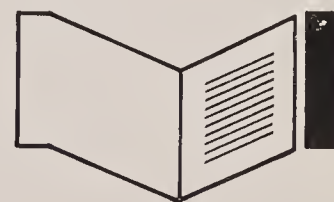
Q. What happens if an agency self-study and on-site review indicate that the agency does not yet substantially meet the standards?

A. The agency is urged to make certain improvements and to report on progress made, usually within a specified period of time. So far, this procedure has been followed in three instances in which accreditation has been deferred.

The aim of accreditation, of course, is improved services. NAC is anxious to do all it can to encourage agencies and schools to overcome whatever difficulties they may have and to qualify at the earliest possible date.

What is your question about accreditation? Send it to Accreditation Questions, c/o National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, 79 Madison Avenue, New York, N.Y. 10016. If it is of general interest we will try to answer it in this column, but, in any case, you will receive an answer.

Current Literature



Prevalence and Causes of Blindness in a Developing Country; A Preliminary Report, by Mohyi-Eldin Said, Hyman Goldstein, Ahmad Korra, and Khalil El-Kashlan. *The Sight-Saving Review* (National Society for the Prevention of Blindness, Inc., 79 Madison Avenue, New York, New York 10016), Vol. 39, No. 3, Fall 1969, pp. 158-61. Investigation of prevalence rates and causes of binocular blindness in Egypt, with an examination of their relationship to age, sex, and urban-rural environment.

Conservation in Blind Children, by Charles K. Miller. *Education of the Visually Handicapped* (1839 Frankfort Avenue, Louisville, Kentucky 40206), Vol. 1, No. 4, December 1969, pp. 101-5. Report on a study made of the ability of 26 visually impaired youngsters (ages six to ten) to attain conservation of substance, weight, and volume.

Blind Students at Texas University, by Charles W. Hoehne. *Rehabilitation Rec-*

ord (Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402), Vol. 11, No. 1, January/February 1970, pp. 16-17. 55 cents per copy. Short report on a special cooperative effort by the Texas Commission for the Blind and the University of Texas at Austin which has resulted in a greatly increased enrollment of visually disabled students. Plans are under way to introduce a similar program at Texas Technological College at Lubbock.

Improving Blind Children's Scholastic and Social Performance with Medication, by Nancy A. Roeske. *Education of the Visually Handicapped* (see address above), Vol. 1, No. 4, December 1969, pp. 105-13. Dr. Roeske, who is consulting psychiatrist for the Indiana State School for the Blind, reports on a drug effectiveness study conducted at the school in the winter 1968-69. The drug used was mellaril and the experiment involved slowing down hyperactive children and helping daydreaming children to exert better thought control.

Differential Assessments of 'Blindisms', by Marguerite A. Smith, Morton Chethik, and Edna Adelson. *American Journal of Orthopsychiatry* (1790 Broadway, New York, New York 10019), Vol. 39, No. 5, October 1969, pp. 807-17. Three case histories illustrative of three quite different behavior patterns, all of which could fall under the general classification of "blindisms." The authors have been working on the longitudinal study of infants blind from birth currently being conducted at the University of Michigan. Their paper was presented at the 1969 annual meeting of the American Orthopsychiatric Association in New York City.

Cutaneous Perception of Color, by Carroll B. Nash. *Journal of the American Society for Psychical Research* (5 West 73rd Street, New York, New York 10023), Vol. 63, No. 1, January 1969, pp. 83-87. Based on a presentation at the Ninth Annual Convention of the Parapsychological Association in September 1966.

Orientation and Mobility Skills for Children, by Robert L. Gockman. *The Long Cane Newsletter* (Peripatology Program, Boston College, Chestnut Hill, Massachusetts 02167; Institute of Blind Rehabilitation, Western Michigan University, Kalamazoo, Michigan 49001), Vol. 3, No. 2, November 1969, pp. 17-21. Mr. Gockman is mobility instructor for the Catholic Charities, Archdiocese of Chicago. His report was part of a panel presentation for the AAWB Mobility Interest Group in Chicago, July 22, 1969.

The Work of the National Library, by W. A. Munford. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London W1N 6AA, England), Vol. 53, No. 629, September 1969, pp. 227-31. Dr. Munford, the director-general of the National Library

(Great Britain), summarizes the history of the Library and describes recent developments such as the new interest in large-print books.

Sports and Hobbies for the Blind, by A. D. Lloyds. *The New Beacon* (see address above), Vol. 53, No. 631, November 1969, pp. 287-90. Paper presented by the secretary of St. Dunstan's to the Fourth General Assembly of the World Council for the Welfare of the Blind in New Delhi, October 1969.

Two special articles for those interested in historical and literary perspectives on blindness appeared in the *American Journal of Ophthalmology* (Ophthalmic Publishing Company, 160 East Grand Avenue, Chicago, Illinois 60611) in 1969. "Shakespeare's Ophthalmologic Vocabulary and Concepts," by Theodore N. Zekman and Ethel H. Davis in July 1969 (Vol. 68, No. 1, pp. 1-9) and "Hippocrates and Ophthalmology," by Jerome T. Pearlman in December 1969 (Vol. 68, No. 6, pp. 1069-76). The December issue also contains a letter from Charles Snyder concerning the Shakespeare article together with a reply by the authors (pp. 1124-25).

—M. M. R.

News in Brief

■ Howard N. Newman, formerly the associate administrator of Pennsylvania Hospital, Philadelphia, has been appointed commissioner of the Medical Services Administration in the Social and Rehabilitation Service, Department of Health, Education, and Welfare. As commissioner, Mr. Newman, 34, will direct the Medicaid program which pays for medical care for over ten million low-income people each year.

■ James Carey, president of the Seeing Eye, Inc., Morristown, New Jersey, has been received into the Order of St. John of Jerusalem, a hospital order established about 600 A.D. on instructions from Pope Gregory I. With headquarters in England, the Order supports many humanitarian activities, including a 76-bed ophthalmic hospital in Jerusalem. Acceptance into the Order is in recognition of outstanding contributions to human welfare.

■ Danny Scholl, 48, a twice-decorated World War II hero and a Broadway and Hollywood singer, has been named "Handicapped American of the Year" by the President's Committee on Employment of the Handicapped. Mr. Scholl, who is partially paralyzed, received the President's Trophy at the annual meeting of the President's Committee in Washington, D.C., on April 23, 1970.

■ James R. Slagle, Ph.D., chief of the Heuristics Laboratory, Division of Computer Research and Technology, National Institutes of Health, Bethesda, Maryland, was recently named one of "America's Ten Outstanding Young Men for 1969" by the U.S. Jaycees. Blind since the age of 15, Dr. Slagle, 35, conducts research on improvements in the efficiency of digital computers, which in turn are used on bio-medical research problems. He also lectures at the Johns Hopkins University Graduate School and is the author of several books on computer science.

■ The Jewish Guild for the Blind, New York City, has named a new executive director, Aubrey Mallach, a former director of program administration at the Westchester County Community Mental Health Board, deputy director of the American Joint Distribution Committee Program in Israel, and executive director of the Health Council of Greater New York.

■ *Rubella*, a new eight-page leaflet, is available from the Maternal and Child Health Service, Public Health Service, Department of Health, Education, and Welfare (Washington, D.C. 20201). Prepared by Jane S. Lin-Fu, M.D., pediatric consultant, Division of Health Services in HEW's Children's Bureau, the leaflet includes information on the history of the disease, diagnosis, care of infants born after a pregnancy complicated by rubella, and the recommendations and guidelines of the American Academy of Pediatrics concerning the use of the live attenuated vaccine. Single copies are available free of charge.

■ *Youth Involvement: The First Step*, the first report of the Youth Committee of the President's Committee on Employment of the Handicapped (Washington, D.C. 20210), was recently released and is available on request. The report summarizes the information and education programs of the Youth Committee's first year.

■ Specially designed sewing machines for blind and physically handicapped persons are now being produced by Husqvarna, the Swedish appliance manufacturer. Special features include levers instead of knobs, raised dot indications on the controls, a guide that assists in feeding the fabric straight, and an English language instruction manual in braille. Further information about the Husqvarna sewing machines is available from Holger Lundbergh, Swedish Information Service, 825 Third Avenue, New York, N.Y. 10022.

■ The Beacon Lodge-Camp for the Blind has announced that its 1970 season will be June 27 to August 29. Located in central Pennsylvania, this summer camp offers a complete range of activities for blind adults and children. For complete information, write to Beacon Lodge-Camp for the Blind, Box 222, Lewistown, Pennsylvania 17044.

■ Four visually handicapped persons and a sighted person are collaborating on a collection of humorous anecdotes about encounters between sighted and visually handicapped persons. The aim is to educate the sighted public, in a light-hearted way, about their attitudes and actions toward the visually handicapped. The authors would, therefore, like to receive such stories from visually handicapped persons. Stories may be sent in print, braille, or recorded form to Mrs. Dorothy Drayson Lowenstein, 3123 Bailey Avenue, Bronx, N.Y. 10463.

■ Tapes for the Blind, Inc. (12007 Suite 2 South Paramount Boulevard, Downey, California 90242) supplies magnetic recording tape to the blind and physically handicapped throughout the world at greatly reduced prices. A non-profit organization sponsored by the Lions Club of Downey, Tapes for the Blind acquires surplus tape from several major aerospace companies, processes it, and puts it on three, five, and seven-inch reels. Tapes of one mil and one-and-a-half mil thickness are available. Price range: 25 cents to one dollar per reel.

■ Helen Keller (1880-1968) has been honored as one of ten "Great Modern Christians" in a series of carved corbels in the Washington Cathedral, Washington, D.C. (A corbel is a stone or wooden bracket projecting from the face of a wall and generally used to support a cornice or arch.) The corbel honoring Miss Keller, and one honoring Jane Addams, founder of Hull House in Chicago, were dedicated on February 8. Others in the Cathedral series include Albert Schweitzer and Pope John XXIII.

■ Rudolph V. Lutter, Jr., of Philadelphia, an attorney-advisor for the Federal Communications Commission, was recently elected to the Board of Managers of the Overbrook School for the Blind, Philadelphia. Mr. Lutter was graduated from the Overbrook School in 1952. Also elected were Mrs. David M. Maxey of Wayne and Stephen C. Cleaves, Jr., of Villanova, Pennsylvania.

■ Mrs. Constance Gant, coordinator for the deaf and blind in the District of Columbia Department of Vocational Rehabilitation, was recently awarded the Elkins Counselor-of-the-Year Award for D.C. and the National Civil Service League's Distinguished Public Service Award for D.C.

■ Dr. George Wald, a Harvard professor of biology and the winner of the 1967 Nobel Prize for Physiology and Medicine for his landmark work in the science of human vision, was the 1969 winner of the \$10,000 Max Berg Award of the David and Minnie Berk Foundation of New York City. The award is made annually for "a major achievement in prolonging or improving the quality of human life." David Berk, president of the Berk Foundation, said that Dr. Wald was selected not only for his achievements in the science of human life but "especially for his emergence as an inspiration to youth, an articulate and moving spokesman for sanity and change in our national priorities, and a widely traveled fighter for peace—not only in Vietnam but also in the fabric of American life."

■ The National Center for Educational Research and Development of the U. S. Office of Education has announced that the first national center specifically concerned with research in the education of handicapped preschool children is to be established by the University of Oregon, Eugene. The new Center for Research and Development in Early Education of Handicapped Children is to be headed by George Sheperd of the University of Oregon and is funded by the Bureau of Education for the Handicapped, Office of Education, under a section of the amended Mental Retardation Facilities and Community Mental Health Centers Construction Act which authorizes research and related activities to improve education for handicapped children. The Center is the seventh university-based research group to be affiliated with the Office of Education's National Laboratory on Early Childhood Education, Urbana, Illinois.

■ John P. Nelson, 53, of Montevideo, Minnesota, has been awarded *Dialogue* magazine's 1969 Public Service Award. An attorney, Mr. Nelson is active in many civic, community, and service organizations. The award is given annually to a blind individual who has demonstrated an unusually great ability to make his way in this predominantly sighted world. *Dialogue* Publications, Inc., Berwyn, Illinois, publishes *Dialogue*, a general interest magazine written and edited by and for the blind. *Dialogue* appears quarterly on discs and in braille.

■ Janet A. Wessel, Ph.D., a professor in health, physical education, and recreation at Michigan State University, East Lansing, has been appointed to the National Advisory Committee on Physical Education and Recreation for Handicapped Children, a seven-member body that advises the secretary of the Department of Health, Education, and Welfare on matters of general policy in this area. Dr. Wessel has been active on many committees to study rehabilitation

programs and served as a consultant with the State Bureau of Education for the Handicapped in Physical Education and Recreation.

■ A course for elderly blind persons called "Problem Solving in the City" was recently held at the Jewish Guild for the Blind, New York City. A representative from the office of the New York State Attorney General spoke to the group at two sessions devoted to consumer frauds. Attorney General Louis J. Lefkowitz expressed his "deep satisfaction" that his office was invited to participate in this program of consumer education and he said, "This group, all of them blind and elderly, shows remarkable spirit in their determination and concern over their status as consumers and as to their legal rights and legal protection."

■ *When Your Patient Is Blind*, a booklet intended to help nurses and other personnel in hospitals, clinics, nursing homes, and other medical facilities to deal confidently, considerately, and correctly with blind patients, is available free from the Industrial Home for the Blind, 57 Willoughby Street, Brooklyn, New York 11201.

■ Volumes IV and V of *Contemporary Papers*, a series of publications that reprints articles of more than common usefulness and applicability to current theory and practice in the field of work for the blind, have recently been released by the American Association of Workers for the Blind, 1511 K Street, N.W., Washington, D.C. 20005. Volume IV is entitled "Employment of the Blind: I.R.S. Conference and Other Papers." Volume V is entitled "Diabetes and Blindness: Implications for Rehabilitation Services." Both volumes are available free to AAWB members.

■ The Distinguished Service Award of the Library of Congress was recently awarded to Robert S. Bray, chief of the Library's Division for the Blind and Physically Handicapped.

■ Science for the Blind (221 Rock Hill Road, Bala-Cynwyd, Pennsylvania 19004) is offering a special introductory tape recording of excerpts from the ten periodicals currently circulated by it. The seven-inch reel is priced at one dollar and includes excerpts from *Communications of the ACM*, *Consumer Reports*, *Extras*, *Oceanography*, *Popular Science*, *Psychology Today*, *Radio Digest*, *Science Recorded*, *Scientific American*, and *Timely Topics*.

Science for the Blind is also now offering its continuity checker, an audible unit with a light probe, liquid level indicator, and clip leads, for ten dollars. Additional attachments include an oven thermometer (\$8.50) and a rain detector (\$2.50).

■ On November 6, President Nixon signed Public Law 91-113, the Child Protection and Toy Safety Act of 1969. This law amends the Federal Hazardous Substances Act and sets forth guidelines for use by the secretary of the Department of Health, Education, and Welfare in determining electrical, mechanical, or thermal hazards in the normal use or abuse of any toy or other article and in banning its sale. The law also adds the term "combustible" following the term "flammable" in the Federal Hazardous Substances Act and defines "combustible" as a substance having a flash point between 80 and 150 degrees Fahrenheit. The sponsors of the law hope that these measures, if adequately implemented, will minimize blindness among children as a result of accidents from toys.

■ *The Report on the Washington Conference on the Employment of the Blind* relates the proceedings of a one-day meeting sponsored by the Internal Revenue Service, the Library of Congress, the Department of Health, Education, and Welfare, the Veterans Administration, and Washington, D.C., radio station WRC and held at the Smithsonian Museum of Natural History on February 26, 1969. The report was recently issued as Publication 675 of the Internal Revenue Service, Department of the Treasury.

■ A new system of traffic lights were installed recently near the National Blind Peoples Association in Alicante, a city of 112,000 on the southeastern coast of Spain. The lights, which flash the usual red, yellow, and green, are equipped with a carillon which emits music three seconds after the green light goes on. Officials in Alicante claim that the "audio-traffic lights" are the first in the world.

■ The International Society for Rehabilitation of the Disabled maintains an International Research Referral Service (IRRS) through which interested individuals and organizations may be kept informed of current rehabilitation-related research being conducted in all parts of the world.

Summaries of current and proposed research projects are collected by IRRS from individuals engaged in research and organizations supporting research. The summaries are classified and coded in cooperation with the Science Information Exchange of the Smithsonian Institution. The broad categories of research covered by the Service include orthopedics, physical medicine, neurological impairments, cardio-vascular disorders, prosthetics and orthotics, technical aids, speech and hearing, special education, vocational rehabilitation, and psycho-social aspects.

Additional information may be obtained by writing to Rehabilitation International, 219 East 44th Street, New York, N.Y. 10017.

Additions

Two articles in the February 1970 issue of *The New Outlook* were originally presented at professional conferences, but were not so identified. "The Team Approach in a Rehabilitation Agency for the Blind," by Eva Wile, was read at a two-day in-service training meeting held at the New York Association for the Blind, New York City, December 1968. "The Aging Blind and Leisure Time Activities," by Mildred F. Stern, was read at the 43rd annual meeting of the American Association of Workers for the Blind, Chicago, July 21, 1969.

Coming Events

May 3-8 American Nurses Association, Miami.

May 11-13 Regional Librarians for the Blind and Physically Handicapped, Annual Meeting, New York City.

May 17-20 American Association of Workers for the Blind, Midwestern Regional Meeting, Detroit.

May 17-20 International Association of Rehabilitation Facilities, Minneapolis.

May 19-22 National Braille Association, Atlanta.

May 31-June 4 National Conference on Social Welfare, Annual Meeting, Chicago.

June 1-5 World Federation of Occupational Therapists, Fifth International Congress, Zurich, Switzerland.

June 7-11 Special Libraries Association, Detroit.

June 8-15 American Diabetes Association, Annual Meeting, St. Louis.

June 21-25 American Medical Association, Annual Convention, Chicago.

June 24-27 Alexander Graham Bell Association for the Deaf, Annual Meeting, Philadelphia.

June 27-July 2 Association for Education of the Visually Handicapped, New Orleans.

June 28-July 3 American Physical Therapy Association, Washington, D.C.

June 28-July 4 American Library Association, Annual Convention, Detroit.

June 29-July 17 Movement in Education: A Symposium Illuminating the Role of Movement in the Education of the Normal and the Atypical Child,

conducted by Bryant J. Cratty, Ed.D., at La Verne College, La Verne, California.

July 22-24 American Association of Workers for the Blind, Southwest Regional Meeting, Little Rock.

August 2-6 National Medical Association, Annual Convention and Scientific Assembly, Atlanta.

August 16-21 American Congress of Rehabilitation Medicine, 47th Annual Session, New York City.

August 17-21 International Congress on Education of the Deaf, Stockholm, Sweden.

September 24-25 American Association of Workers for the Blind, Middle Atlantic Regional Meeting, New York City.

September 25-27 American Association of Workers for the Blind, Western Regional Meeting, Hollywood, California.

September 26-30 National Rehabilitation Association, Annual Conference, San Diego, California.

September 27-October 1 National Recreation and Parks Association, Philadelphia.

October 5-9 American Academy of Ophthalmology and Otolaryngology, Las Vegas.

October 12-16 Audio Engineering Society, New York City.

October 17-22 American Academy of Pediatrics, San Francisco.

November 7-13 American Occupational Therapy Association, New York City.

December 13-18 White House Conference on Children and Youth, Washington, D.C.

Sensi-Quik

The Touch Cane for Walking
Faster with Safety



Sensi-Quik's contour handle arranges the fingers for quick down-touching and accurate, rhythmic side motion with thumb and finger, minimizing wrist action. The nub at the handle's elbow rides in the crotch of thumb and forefinger, providing purchase for fingers when the hand perspires or when it rains. The tapered-off end reduces "tripping hazard" on crowded sidewalks.

Made of flexible fiberglass, tipped with diamond-hard tungsten carbide, the Sensi-Quik touch cane gives the traveler a sharp signal and alerts other pedestrians to his approach.

The cane's working tip, a carbide disk one-half inch in diameter, gives the user a special advantage in the subway. As he moves across the loading platform toward the train, the carbide tip glides easily over the rough concrete surface, giving off a "rippling" sound. Other riders, alerted by this sound to the traveler's approach, are more likely to help him get aboard.

The carbide tip, originally developed in 1956 for the bamboo model of the Sensi-Quik, is now available for the fiberglass model, which was introduced in 1965 and has been continuously improved ever since. The shaft of the fiberglass cane is tubular in construction, giving adequate strength within necessary restrictions in weight.

The fiberglass model comes with either crook or contour handle and either carbide or replacement steel tip. The bamboo model, still available to those who prefer it, comes with polished wood crook handle and carbide tip.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact

Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

Mr. Franklin S. Clark
The Go-Sees
166 East 92nd Street
New York, N.Y. 10028

THE NEW Outlook FOR THE BLIND

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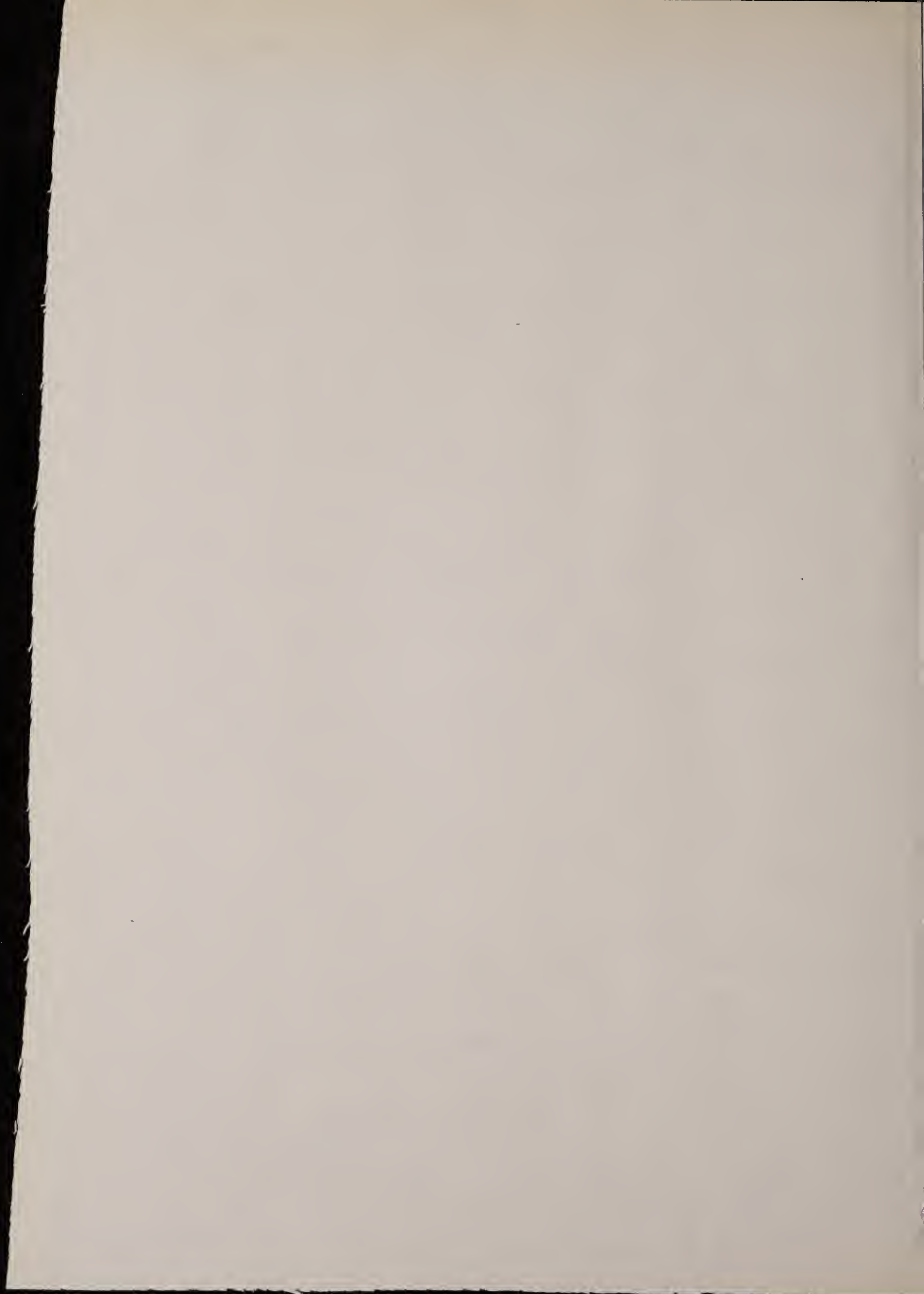
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A Tactile-Developmental Technique for Abacus Instruction and Operation

For designing and building an abacus (adapted from the Japanese *soroban*) that could be used as an effective "computer" in the hands of the blind operator, we who are visually impaired or who work with visually impaired children and adults owe a personal and professional debt of gratitude to T. V. Cranmer, director of the Division of Services for the Blind, Kentucky Department of Education. In like manner, for their invaluable contributions to the understanding of the operation and teaching of the abacus in the areas of number relationships, mathematical concepts, and practical arithmetic, we must be sincerely grateful to Takashi Kojima of Tokyo for his basic text, *The Japanese Abacus: Its Use and Theory* (Rutland, Vt.: Charles E. Tuttle, 1954); to Fred. L. Gissoni of the Bureau of Rehabilitation Services, Kentucky Department of Education, for his book, *Using the Cranmer Abacus for the Blind* (Louisville, Ky.: American Printing House for the Blind, 1962); to Dr. Mae E. Davidow of the Overbrook School for the Blind, Philadelphia, for her creative teaching manual, *The Abacus Made Easy* (Philadelphia: Overbrook School for the Blind, 1966); and to Professor Paske of the School for the Blind in Copenhagen for his inspiration and assistance in the actual demonstration and teaching of abacus operation.

□ Despite the fact that many blind people are now successfully using the Cranmer abacus, there are many more who are not using it and who are, thereby, being deprived of the simple efficiency which it can provide them in meeting their daily "number needs." Some, it is true, may not know of the device, but many others are well aware of its existence and know where they may be trained in its operation, or are in a position to teach themselves through available literature or through easily available correspondence courses. The barrier, therefore, is not only ignorance or unavailability, but doubt or fear. This is especially true of older blind adults who, not having kept up with the practice of reading braille or of performing handicraft activities, feel that their fingers are not sufficiently agile, adept, or sensitive to meet the requirements of abacus operation.

Even a seeing adult will experience feelings of uncertainty and insecurity when told of the great speed that can be achieved with this type of computer "even by the blind operator." Thus, at an excellent demonstration of the teaching and use of the abacus, a professionally capable and creative adult was heard to say quite honestly, "I'm just too old for that type of frustration." There is no doubt that this person could learn to op-

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Resistance to the Use of the Abacus

Practice is all that is needed

Because of his invaluable assistance and encouragement, this work is dedicated to a talented student and an inspiring teacher, Ted Lennox, for whose abacus workshop and seminar, under the auspices of Michigan State University, this paper was originally prepared.

erate the abacus as well as the next person. He must, however, be willing to sacrifice some of his other interests and to devote the necessary time, energy, and attention to the endeavor. By keeping his abacus always with him and, by way of practice, to note license-plate numbers, street numbers, telephone numbers, etc., its use could easily become second nature to him. Of course, the primary use of the abacus for the blind adult, professional worker, teacher, or older student, is as a simpler and more effective arithmetical tool than the cube board, the "slate," or any other available portable device.

□ The only criterion for the use of this "computer" by the vast majority of people (blind or sighted) must be complete reliability within reasonable time limits, rather than a display of dramatic dexterity or "lightning" speed. Abacus instruction, therefore, should emphasize a minimum of manipulative movements consistent with the limits of the blind person's tactile perception. The problem is to develop basic manipulative tactile patterns that will make use of the abacus meaningful but allow for the later development of automatic use.

If the blind person, whether sitting, standing, or walking, is to use the abacus as a personal, portable computer without the need for a desk, table, or work bench, he must be able to operate it with one hand while holding or steadying it with the other hand. To do this, the left end of the abacus is grasped with the left hand and is held with the thumb extended along the bottom edge; the middle, ring, and little fingers crooked over the top edge; and the index finger (pointing to the right) above the abacus where it may freely move and explore. Held in this way, the abacus may be steadied against the body, that is, the palm of the left hand facing the body and the abacus facing away. The right hand is, therefore, the primary manipulative hand for abacus operations; more specifically, the index finger and thumb of the right hand perform all the bead movements.

Many teachers of the blind feel that children should be taught to use both hands in moving the beads or counters. Although there are good reasons (a child's hand is too small to hold the abacus steadily without the support of a desk or table and the use of two hands achieves more efficient orientation in the child's spatial relations on the face of the abacus), there is also a drive to develop high speed techniques. Such proficiency may be useful to mathematics students who require both speed and accuracy, but for the average adult user, for example, a housewife or salesman, reliable, not instant, results in their computations are all that is required. One-hand manipulation for such persons is, therefore, adequate and more versatile.

□ Basically, there are four directional movements of the beads or counters on each rod of an abacus: 1) setting or moving the unit beads up to the bar; 2) clearing or moving the unit beads down away from the bar; 3) setting or moving a five-counter down to the bar; and 4) clearing or moving a five-counter up away from the bar. Based on the experiences of many users, experiences supported by Kojima's analysis of finger movements, the most efficient procedure in performing these four directional movements requires the use of only the thumb and index finger of the right hand. The first

Goals of Abacus Use

Holding the abacus

One-hand or two-hand operation?

The Four Directional Movements

movement (setting unit beads) is performed with the thumb, and the remaining movements (clearing unit beads, setting the five-counter, and clearing the five-counter) are performed with the index finger. Although most teachers insist on this technique, there are some who allow wide variation. In the interest of efficient one-hand manipulation, however, the "three-and-one" manipulative pattern is recommended.

A sighted person looking at the abacus can immediately discern what it takes tactile exploration some time and effort to discover. This, however, is no barrier in using the abacus. When the abacus is used as it is intended to be used, only one rod at a time is involved in any procedure, that is, only one number at a time can operate on another number. The fact that the thumb and index finger cannot observe bead configurations on the rest of the columns, therefore, is not particularly significant.

Just as the six general rules for bead movement in the Japanese-visual technique are directionally determined for maximum speed and for minimum shift of attention or break in directional movement, so the basic principle of the tactile-developmental technique is to focus initial attention and to begin all bead movements (except in the setting or clearing of five) on the unit beads. All other steps in an operation follow this one. Some blind operators, in moving the index finger down to the unit beads, can momentarily detect the location of the five-counter bead before going to the assistance of the thumb in determining the positions of the unit-beads. This is a technique not to be discouraged in those who are able to do it naturally, but for those who do not, attention must be initially focused on the unit beads. Because the developmental pattern of a number or operation may require no movement of the five-counter bead, time and attention should not be wasted on that bead—a waste which would not exist in visual observation.

□ With the foregoing remarks on technique and principle in mind, the following general rules can be set forth:

1. The thumb, having determined the arrangement of the unit beads (with or without the assistance of the index finger), moves the unit beads up to the bar somewhat before the index finger moves the five-counter bead down to the bar. This combination of operations may become a simultaneous neuromuscular coordination for the experienced and adept operator.

2. Unit beads are to be cleared (moved down from the bar) before the five-counter bead is cleared (moved up from the bar).

3. Unit beads are to be set (moved up to the bar) before the five-counter bead is cleared.

4. Unit beads are to be cleared before the five-counter bead is set (moved down to the bar).

5. All bead movements on a column are to be completed before attention is shifted to the movement of beads to the left.

Except for slight modifications in rules one and four, there is remarkable agreement, at least on the surface, between these rules and those based on visual perception. It is in that small psychological difference, however, that we find the ultimate philosophic distinction between the basic concepts of

Only one rod at a time

Unit beads are considered first

General Tactile-Developmental Rules

Similarity to visual techniques

continuous developmental patterns on the one hand and a set of direct and indirect bead combinations and "secrets" on the other hand.

A fundamental principle in abacus operation is mechanization, that is, each setting or clearing becomes an automatic neuro-muscular movement with practically no mental effort. These mechanical movements, however, are built on a sound mathematical understanding and not merely on repetitions of the movements. This understanding is based on the important number complements of five (two and three, one and four) and ten (five and five, four and six, three and seven, two and eight, one and nine). In the operation of the abacus, these number complements play an important role in the three ways in which numbers one to four and six to nine are added (one direct and two indirect) and the two ways in which five is added (one direct and one indirect). From an understanding of the basic mathematical principles, the student can progress to the mechanics of automatic application. In the tactile-developmental technique, a developmental pattern is emphasized for each number with no conscious distinction being made between the direct and indirect means of operation.

Since all tactile exploration of the abacus begins with the unit beads (except in those operations that only involve the five-counter bead), the developmental patterns for all numbers one to four and six to nine begin with setting or clearing of the unit beads. These patterns for addition are presented in Table 1.

<i>Number To Be Added</i>	<i>Direct</i>	<i>Indirect I</i>	<i>Indirect II</i>
1	+1	-4, +5	-4, -5, +1 left
2	+2	-3, +5	-3, -5, +1 left
3	+3	-2, +5	-2, -5, +1 left
4	+4	-1, +5	-1, -5, +1 left
5	+5	—	-5, +1 left
6	+1, +5	+1, -5, +1 left	-4, +1 left
7	+2, +5	+2, -5, +1 left	-3, +1 left
8	+3, +5	+3, -5, +1 left	-2, +1 left
9	+4, +5	+4, -5, +1 left	-1, +1 left

+ = setting bead(s)
- = clearing bead(s)

The following examples illustrate the use of these patterns: 1) With 5,139 entered on the abacus, 3,333 is added to it by beginning at the left in the 1000's column, set three; in the 100's column, set three; in the 10's column, clear two, set five; and in the units column, clear two, clear five, set one left, giving a completed sum of 8,472. 2) With 2,749 entered on the abacus, 6,666 is added to it by beginning at the left in the 1000's column, set one, set five; in the 100's column, set one, clear five, set one left; in the 10's column, clear four, set one left; and in the units column, clear four, set one left, giving a completed sum of 9,415. It should be noted that in this second example, each operation begins with the unit beads of each column with no attention being

Mechanization

TABLE 1
Tactile-Developmental Patterns
for Addition

Examples of addition

paid to the five-counter beads on the 10's and units columns until the final sum is read.

□ The tactile-developmental patterns for subtraction, presented in Table 2, are similar to those for addition. These patterns, however, involve a reversal in the traditional Japanese visual technique. In using the indirect methods of subtraction the Japanese insist that a bead to the left must be cleared before there is any movement of unit or five-counter beads, that is, upon visually noting the impossibility of direct subtraction, the sighted operator would immediately clear a bead to the left before shifting his attention to the indirect subtraction on the column under consideration. To follow this pattern tactually would involve two shifts of attention (exploring the column in question, moving to the left to clear a bead, returning to the right to complete the indirect subtraction). In subtraction, therefore, as in addition, all operations are to be completed on the column in question before moving to the column to the left.

<i>Number To Be Subtracted</i>	<i>Direct</i>	<i>Indirect I</i>	<i>Indirect II</i>
1	-1	+4, -5	+4, +5, -1 left
2	-2	+3, -5	+3, +5, -1 left
3	-3	+2, -5	+2, +5, -1 left
4	-4	+1, -5	+1, +5, -1 left
5	-5	—	+5, -1 left
6	-1, -5	-1, +5, -1 left	+4, -1 left
7	-2, -5	-2, +5, -1 left	+3, -1 left
8	-3, -5	-3, +5, -1 left	+2, -1 left
9	-4, -5	-4, +5, -1 left	+1, -1 left

+ = setting bead(s)
- = clearing bead(s)

The following examples illustrate the use of the tactile-developmental patterns for subtraction: 1) With 962 entered on the abacus, 333 is subtracted from it by beginning at the left in the 100's column, clear three; in the 10's column, set two, clear five; and in the units column, set two, set five, clear one left, giving a difference of 629. 2) With 825 entered on the abacus, 666 is subtracted from it by beginning at the left in the 100's column, clear one, clear five; in the 10's column, clear one, set five, clear one left; and in the units column, set four, clear one left, giving a difference of 159. Here again, the tactile observation and operation begin with the unit beads of each column with no attention being paid to the five-counter beads unless they become part of the computation.

Although the functional structure of the tactile-developmental technique is based on sets of patterns for addition and subtraction, it can be used in the writing and adding of the partial products in multiplication and in subtracting in short and long division. It may even be possible to rethink and restructure the basic processes of abacus multiplication and division to make them more consistent with the limitations and efficiencies of tactile, rather than visual, perception.

Subtraction Involves a Reversal of Traditional Technique

TABLE 2
Tactile-Developmental Patterns for Subtraction

Examples of subtraction

Uses in multiplication and division

□ Although the tactile-developmental techniques in this presentation are directed toward practical proficiency and accuracy, they do permit the development of greater speed. The mastery of these minimal manipulative movements, which are consistent with tactile perception, could easily lead, with appropriate expenditures of time and effort, to rather high-speed calculation. Those blind operators who become genuinely proficient may also benefit from learning the traditional visual techniques.

Whether the teaching of the abacus to the blind is enhanced or not by the teacher learning to use the abacus while blindfolded appears to be an open question. It is known that blindfolding provides a sighted person with a far from realistic appreciation of the emotional response to blindness. Nevertheless, it can be argued that those who teach the use of the abacus to the blind should recognize and respond to the differences between tactile and visual perception in abacus instruction and operation. Some will certainly benefit from experimenting with the abacus while blindfolded, others will gain little from the experience, and still others will not need it at all.

□ Both the traditional Japanese-visual techniques and the tactile-developmental technique for abacus instruction and operation emphasize the same goal—efficiency of computation with economy of movement. At each step in the operation of the abacus the operator is involved in two functions, observation (perceiving bead location) and operation (performing bead manipulation). Because observation and operation in the visual technique take place on the two different sensory levels of vision and touch, economy of movement is of concern only in bead manipulation. In the tactile-developmental technique, however, both observation and operation occur on the same sensory level, touch. Economy of movement, therefore, is involved in both these functions. As noted in the discussion above, such economy can be achieved by slightly modifying two of the six basic traditional procedures of bead movement to preclude the duplication of finger movements that would result if the visual technique were applied tactually.

The tactile method, with its developmental patterns, is probably easier for blind children and adults to learn and to apply mechanically. There is no doubt that, with practice, both techniques could be used effectively; and, just as certainly, neither method will prove productive without practice.

Developing Greater Speed

The teacher and the blindfold

Summary

A final word

The Role of the Placement Counselor in Rehabilitation:

His Problems, Fears, and Solutions

The role of the placement counselor in rehabilitation needs to be regularly re-examined and updated with any new ideas which can help the placement counselor to carry out his job fully. It should be noted that I will confine this discussion to job placement in competitive industry or, as the *Dictionary of Occupational Titles* generally refers to it, unskilled, semi-skilled, and skilled labor.

□ Some of the problems that the counselor faces on a day-to-day basis, listed in no particular order, are: 1) too large a caseload of unqualified blind people; 2) too small a caseload of qualified blind people; 3) a too large and varied territory, for example, urban, small towns, rural including both farm and non-farm, etc.; 4) relocation of blind person and family when industry is not within commuting distance of client's present home; 5) being assigned placement responsibilities of the highly motivated, multiply handicapped blind persons; 6) finding employment which will at least match blind persons' existing income from pensions, etc.; and 7) avoiding stereotyped, unimaginative thinking in planning for job placement.

I am certain that this list could be augmented, but I have only tried to state some of the more important problems that face a counselor. I have purposely steered away from those problems confronting a counselor in a face-to-face relationship with a prospective employer because I feel that this area of counselor training is more than adequately covered by the Southern Illinois University program and by various state in-service training conferences.

□ The counselor's fears, of course, are closely related to his problems. It has been my experience that one fear most often expressed by placement counselors is that of not having a qualified blind person to place on a job which, through his placement activities, he has developed with a cooperative employer. This is more of a problem than some of us who are not directly on the firing line can fully understand or appreciate. A corollary to this is the fear of being pressured into placing a blind person who might be less than qualified to meet all of the demands of competitive employment. This kind of placement is due more to supervisory and administrative demands for the counselor to meet predetermined quotas than to any other individual factor.

Another fear that the counselor may have is that of mismatching a blind person and a job. The counselor must guard against selling a blind person on the idea of taking a job that is beyond his capabilities. The outcome of such a placement is at least painful.

Another fear that is usually not verbalized by the counselor (although he may on occasion take a fleeting, inward look at it) is "Am I myself really convinced that these blind persons whom I am attempting to place in com-

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Problems

Fears

Fear of mismatching

Lack of confidence

petitive industry are both interested in and able to perform a job at the same level as their sighted, fellow employees?" This kind of fear can be dealt with in several ways, as I am sure is well known. However, if it cannot be resolved, then quite obviously the counselor is in the wrong field of employment himself. If and when a placement counselor is unable to say to himself that he is convinced beyond any doubt that blind persons are capable of functioning as workers in the competitive labor market, then he is performing an immeasurable disservice both to his clients and to himself.

Much has been done to help the placement counselor meet and overcome the problems and fears just stated. In my opinion, however, the nature of this help is centered in too narrow an area of the counselor's training program. He is equipped with all of the essential "do's and don't's hardware" required to carry out a selective job placement program, but little or nothing is provided to help him cope with possible failure. I hold supervision responsible for failing to deal with this unmet need of placement counselors and for failing to provide more supportive guidance to their counseling staffs when it is needed. We are quick to praise a placement counselor on his successful activities, but how often do we give him credit for tireless activities which never quite culminate in a placement. That baseball player who constantly exerts himself at or near the 100 percent level of performance is quite often the team leader in errors because he does not believe in the existence of a "routine play."

□ In conclusion, I am unable to offer any well-defined solutions to the problems and fears enumerated above but I will say that the stating of problems and fears and the searching for their origin will many times help in their ultimate resolution. A hypercritical supervisor who is blinded by the "numbers game" is fighting a losing battle both with his counseling staff and with the "system" which has created the "numbers game."

Ed. note: This paper was adapted from a speech given by the author at the Annual Conference of the American Association of Workers for the Blind held in Chicago, July 1969.

Help is often too narrow

Conclusion

Readers of *The New Outlook for the Blind* are reminded that the magazine is not published during the months of July and August. Publication will be resumed with the September issue.

The Blindness System

As we have become more concerned with the adequacy of our social services—particularly those affecting the poor, the disabled, and the neglected—we have begun to learn not only how hard it is to change inadequate service systems but also how difficult it can be to understand them in the first place. One cluster of approaches to such understanding and such change is that of systems analysis. In these pages, my purpose will be to explore some of the insights one form of systems analysis offers into the complex of institutions which provide services to the blind in the United States.

□ There exists in this country a “blindness system.” By blindness system I mean that interrelated network of people, organizations, rules, and activities which includes: (1) *all persons with severe visual impairments*; (2) *all agencies and groups that serve these people*; (3) *the training and research that affect these services*; (4) *the laws and policies under which services are provided*. To call all this a system is not to imply that it has well-defined, agreed-upon goals and coordinated programs for reaching them. In fact, the complex of institutions is fragmented and tends to behave in a disorganized way. In this sense, it is a *nonsystem*. Nevertheless, all the components listed above affect the experience of the American blind, and we can profit from an examination of the actual *nonsystem* from the point of view of an ideal hypothetical system which *would* arrange its activities and allocate its resources in order to meet its goals in a coordinated way.¹

Chart I suggests something of the makeup of the actual blindness system in the United States. It estimates the total allocation of dollars to blindness as of 1966 (about \$446 million), and indicates the relative contributions to that sum from federal, state, and private sources. It also shows the principal services offered by agencies for the blind. The chart presents the blindness system as a kind of mechanism through which dollars flow from federal, state, and private sources into a variety of service activities which are “matched,” in turn, with different categories of blind persons.

Agencies specifically concerned with the blind exist at the federal, state, and local levels. They fall into two parallel systems, one public and the other private—although the clarity of this distinction has been eroded in recent years as private agencies have sought and received greater amounts of public

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Defining the “System”

The official blindness system

This article is based on a year-long study of services to the blind in the United States which was undertaken by the Organization for Social and Technical Innovation under the sponsorship of the National Institute of Neurological Diseases and Blindness. The NINDB is not responsible for the findings and interpretations here. It is reprinted here by permission of the author and The Public Interest (where it appeared in the Number 18, Winter 1970 issue). Copyright 1970, National Affairs.

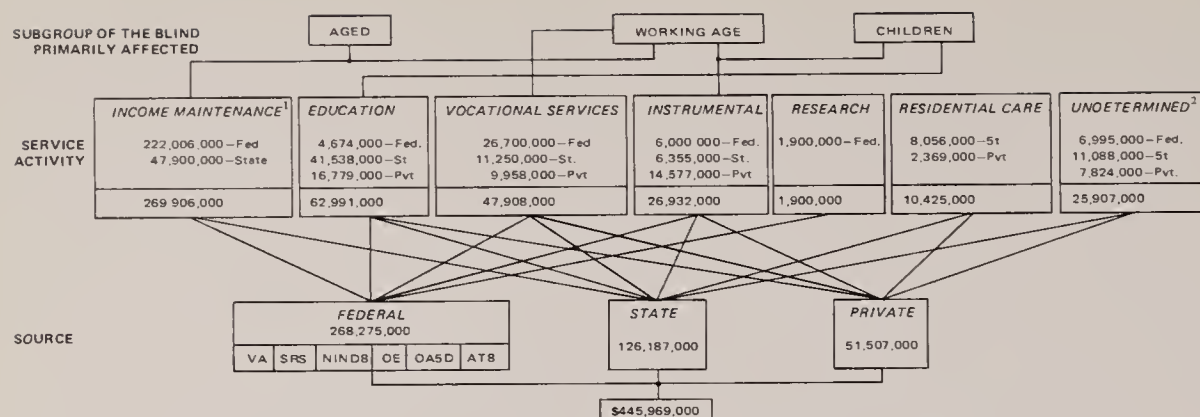


CHART 1

National Resource Flows Related to Blindness

funds. There are, in all, approximately 800 agencies for the blind, both public and private. These differ with respect to the services they provide and the basis on which they are organized. Some are specialized in individual functions, such as Aid to the Needy Blind or residential schools for the blind. Others are large, multifunctional agencies. Still others are consulting agencies or producers and distributors of materials for the blind. In addition to the providers of services, there are special organizations concerned with blindness-related research, both medical and nonmedical, and the manpower training. All these constitute what I will call the *official* blindness system, which provides services specifically to the blind.

Beyond that there is an *indirect* system which provides benefits or services to the blind under headings other than blindness, such as welfare, social security, veterans' benefits, and health. The magnitude of this indirect system is substantial. Conservative estimates of the cost of medical and personal care provided to blind persons in general hospitals and nursing homes in 1966 exceed \$200 million.

And finally there is an *informal* blindness system, which consists of services to the blind provided not by established agencies, but by families, friends, and neighborhood acquaintances. We have attempted no estimate of the dollar value of these services, but their magnitude—for reasons to be suggested later—may well exceed the entire agency system concerned with the blind.

□ The available data concerning blindness in the United States are exceedingly poor—so poor, in fact, that no significant quantitative statement about the system can be made with any high degree of certainty. Consider, for example, the central question of how many blind people there are. At the present time, there are three principal estimates:

Source	Rate Per 1000 Population	Total United States
MRA Projection to Total (1965)	1.5	290,000
NSPB Fact Book (1965)	2.1	416,000
National Health Survey	5.6	1,090,000

Of the three estimates, the highest is more than 3 times the lowest. These wide variations exist because different agencies use different definitions of blindness, different test methods, and different sampling procedures.²

The indirect blindness system

The informal blindness system

The Problem of Data

The Model Reporting Areas (MRA) are 14 associated states which maintain registers of persons with severe vision impairment. They define blindness as "visual acuity of 20/200, if the widest diameter of the field of vision subtends an angle no greater than 20 degrees." This is a variant of the standard accepted definition of "legal blindness." The MRA reporting system requires that persons be listed as blind by an ophthalmologist using the standard Snellen charts.³ There is reason to believe, however, that ophthalmologists underreport blindness: first, by failing to report as blind persons (often relatively well-to-do) who wish to avoid the stigma of blindness; and second, because many poor and black persons who are legally blind never go to an ophthalmologist.

The MRA data

The second estimate—that in the Fact Book of the National Society for the Prevention of Blindness (NSPB)—is based on an extrapolation from state demographic data using arbitrary weighting factors tied to the number of people in the blindness register in the state of North Carolina.

The NSPB data

The National Health Survey derives its data from household interviews with a sample of the civilian noninstitutionalized population of the United States. It employs no test of visual acuity and classifies persons into groups of severe visual impairment according to the respondent's reply.

The NHS data

Nevertheless, the data concerning the numbers of the blind are actually rather better than those concerning the effect or cost of services provided to the blind, or the number of blind persons receiving benefits from agencies not considered blindness agencies. Some of this information is literally impossible to obtain because of the organization, format, or confidentiality of agency reporting systems. This is another reason why it is difficult to describe, much less evaluate, the blindness system.

A conspiratorial mind might construe this state of affairs as a defense mechanism adopted by the *nonsystem* as a safeguard against the unwanted inquiry or change. More likely, it is merely a result of the fragmentary and disorganized character of the system; but the effect is the same as if the system wished to protect itself from scrutiny.

□ There has been, since the turn of the century, a significant change in the makeup of those people identified as blind. In the period between 1900 and the 1930's, the blind were identified primarily as children and adults of working age. The dominant causes of blindness were war, industrial accident, and disease, and the blind were likely to have only the single handicap of blindness. During the 1930's, federal and state aid to the blind came into being on a significant scale, carried along on the wave of New Deal social legislation. This period of change saw the establishment of certain major programs for the blind. *The sheltered workshop*, publicly or privately supported, trained blind adults for occupations thought to be particularly appropriate to the blind—piano tuner, for example, or broom maker, or vending stand operator. *The school for the blind* provided separate track, physically segregated education for the blind child. And in the early 1940's, state *vocational legislation* promoted rehabilitation for adults of working age.

The Mismatch of Services and Clients

All such programs treated fitness for work and economic independence through employment as the central tests of rehabilitation.

Today, the makeup of the blind has changed. The population of the severely visually impaired in the United States is now heavily weighted toward (1) the aged blind; (2) the multiple-handicapped, especially among children; (3) the poor ethnic minorities, especially the low-skilled; (4) those with significant residual vision. All sources indicate that a high percentage of the blind are persons over 65, although the estimates vary from 40 percent (MRA) to 65 percent (NHS, which uses a broader, functional definition of blindness). The dominant causes of blindness today are senile degeneration, diabetes, and other multiple etiologies characteristic of old age and, among children, genetic and prenatal influences which tend to be associated with other disabilities in addition to blindness. The overall pattern, both for the aged and for children, is one of multiple disability. Projections of the prevalence of blindness and the makeup of the blind to 1970 and 1985 suggest that, with the increase in the numbers of persons over 65, these trends will continue.

These developments mean that, for an increasing majority of the blind, economic employment is an unrealistic goal. *Nevertheless, agencies for the blind continue to behave as though this shift in the blind population had not taken place.* In the selection of clients and the provision of services, their programs are oriented to work or to education leading to work. They measure the success of their services in terms of their clients' achievement of some measure of economic independence. Only a small number of significant exceptions to this general pattern exist within the blindness system.

At the time of its inception, each of these work-oriented programs represented a significant innovation in what was considered humane treatment for the blind. Yet each has tended to become established and frozen in place as an aspect of the way services to the blind "must" operate. Thus, the blindness system today is an array of agencies and services dating from different periods, based on different assumptions concerning the character of the blind population, pursuing different goals, and using different technologies. The effect is rather like complex geological strata in which substances of widely varying origins and characters exist side by side.

The result is that the official blindness system provides services to only a relatively small fraction of those who are actually blind and eligible for assistance. Since the services offered are largely education, rehabilitation, and care, *only about 20 percent of the total blind population are actually being served today.* In general, these 20 percent are either children with the single handicap of blindness or adults of working age and potential for employment. The 80 percent who receive no services tend to be those without apparent potential for employment or educational advancement: the aged, the multiple-handicapped, the poor, and the low-skilled. Such persons are shunted off to other systems which provide minimal income-maintenance or custodial care, or are ignored. A substantial portion of the 80 percent may

Makeup of the blind population

Shift in population ignored

Only a small fraction are served

receive some form of support from the informal system of family, friends, and community.⁴

Why have the design and mix of official services been so unresponsive to changes in the needs and capacities of the blind? The answer is that, for good bureaucratic reasons, agencies tend to behave as if they believed that the blind need, or should have, *the services which happen to be offered by the agencies* rather than that agencies should modify services in response to changing characteristics of the blind population. This is true both of the kinds of services offered and of the methods or techniques by which such services are delivered. To be sure, there are exceptions. But in the case of services designed specifically for the "newer" categories of the blind, the exceptions do not exceed three agencies in each category. And even in the case of services designed for more traditional categories of the blind—mobility training, comprehensive rehabilitation, or training in the use of low vision aids—only a few agencies have shown themselves to be innovative in any significant degree. Taken together, these exceptional, change-oriented agencies constitute only a tiny fraction of the entire official blindness system. The overwhelming pattern remains firmly based on the assumption that "the blind" are employable adults, children with the single handicap of blindness, and totally blind. The shifting population of the blind has falsified that assumption, yet the pattern of programs remains.

□ Why does this blindness system behave in such a fashion? One important factor is to be found in the purposes of the organizations and individuals who serve the blind. Now, because the system is in reality a *nonsystem*, there is no group or institution capable of setting a common objective for all elements of the blindness system. Nevertheless, it is clear from the statements of participants and observers that there are three main objectives which enjoy widespread currency, in practice or in rhetoric, within the blindness system:

(1) Minimize the cost to the blindness system of providing services to the blind. This is the principle of "least cost to the system itself."

(2) Minimize the cost to the nation of providing services.

(3) Optimize human functioning for the blind. This objective, frequently voiced by professionals within the system, focuses on what services may enable the blind to *do* or *become*, rather than the economic criteria of performance.

Each of these objectives implies a different strategy for allocating resources and defining configurations of service and coverage.

Least cost to the blindness system. If it were to operate under this principle alone, the blindness system would provide services only to those blind people who are likely to be able to enter the labor force. This way, the system encounters only those who can be trained to leave the blindness system quickly, thereby maximizing turnover rates and minimizing the cost to the blindness system. Hence, the system would select children with the single handicap of blindness and adults of working age and would provide them

Unresponsiveness

Strategies, Constraints

Least cost to the blindness system

with education and instrumental and vocational services. The others—multiple handicapped children, adults over 44, etc.—it would either shunt off to other systems or provide with minimal care or maintenance.

Least cost to the nation. Under this principle, the system would operate much as it does under the first principle. The main difference is that, under this second objective, it would be far less selective in providing educational, instrumental, or vocational services. The cumulative costs of income maintenance or custodial care are so great that it is cost-effective to give job-oriented services to all individuals for whom there is *any* finite chance that they will be able to leave the system. The first objective, which does not require the blindness system to bear the costs of long-term maintenance or support of those blind who are unable to work, provides the system with no incentive to behave this way.

Here, the analysis touches on a peculiar and interesting feature of the blindness system. *Those who must decide whether or not to provide services to an individual are institutionally separated from those who stand the cost and trouble of long-term maintenance and care.* The current system's fragmentation removes the incentive to provide services so as to avoid later maintenance and care.

Optimize human functioning. This objective implies that, even if there is no possibility of his gaining economic independence, it is worth devoting resources to a blind person in order to make him function somewhat more independently. This means, in other words, that an additional benefit—personal independence—counts in offsetting costs incurred in the system. The consequence of such an objective, of course, is to increase the cost of operating the system. In 1966, for example, an additional \$1 billion (on a base of about \$446 million) would have been needed for a blindness system which attempted to maximize human functioning. A very large portion of that increase would have gone for services to the aged.⁵

In terms of these three models, the current blindness system is a hybrid. With respect to the way in which it determines what categories of the blind shall receive services, it functions according to the principle of the least cost to the system itself. Those blind without high potential for gainful employment are either ignored or shunted off to other systems (such as welfare, veterans' care, etc.). But with respect to those whom it *does* select for training or care, the blindness system tends to behave as if its purpose were to optimize their human functioning. Its expenditures on the blind it chooses to encounter are high.

□ It is remarkable that the network of blindness agencies has been able to keep its traditional modes of operation intact. That it has done so is not the result of any conscious or systematic policy. Rather, little change has occurred because the structure of the system itself affects the way in which individual agencies set their goals and allocate their resources.

The blindness system is horizontally and vertically fragmented. Public and private agencies tend to be cut off from one another, and even the major public agencies function separately. There is discontinuity among national, state,

Least cost to the nation

Optimize human functioning

Blindness system is a hybrid

The Agency as a Homeostatic System

and local levels. Public laws, jurisdictional rules, agency policies, and provisions governing the use of private dollars—all these tend to lock service units into artificial boundaries and prevent the system from modifying its behavior in face of changing client demand. Moreover, the system's isolation from other service systems—health or welfare, for example—makes it difficult to cut across system boundaries in order to insure that all the blind will have a full range of comprehensive services. And finally, the blindness system consists of only a few large agencies and many small ones. Most of these latter are dependent on grass roots support, particularly in the form of private endowment, and are therefore capable of resisting public pressure for change. The result is that there exist almost no points at which public action might effectively move the system as a whole.

In the context of such fragmentation, the discretion of individual agencies is used in a way that works against change. Consider these major elements of agency discretion:

Working against change

Control of client access. Agencies can limit their services to “good” clients and can actually seek out clients meeting their criteria. In large cities, for example, there is active competition for children who are blind only. And the parents of such children often learn to go “agency shopping” as a result.

Control of the duration of the client's stay. Agencies are often free to determine how long they will serve a client. Agencies tend to keep “good” clients for longer periods of time than “bad” clients—months instead of weeks, and not infrequently for years.

Control of the portion of the client's “life space” which the agency takes up. Agencies may, at their discretion, extend their services not only to disabilities directly relevant to blindness, such as those associated with reading or travel, but to the client's overall health, his family relations, his psychological well-being, and the like. At one extreme, the agency becomes the client's total environment.

Control of investment per client. As scope of service and duration of stay increase, the agency increases its dollar and manpower investment in individual clients.

Through the manipulation of these discretionary “valves,” agencies tend to behave like homeostatic systems. *They can and do compensate for a declining population of the “right” sorts of clients by increasing their investment in the clients they do serve*—all under the justification of improving the quality of service. As a consequence, the agency staff remains stable even though client populations decrease. The agency behaves as though it were optimizing the use of its existing resources.

System is self-reinforcing

This homeostatic system is self-reinforcing, but it also depends on a number of factors which are both incentives to and means by which agencies maintain something like a stable state. There is, for example, an ideology still in good currency among professionals within the blindness system. It centers on concern with individuals rather than with numbers, on high standards of service as defined by the profession, on “worthy” clients, and on professionalism conceived as a definition of roles both for the provider and

for the user of service. This ideology encourages the agencies' homeostatic tendencies: after all, if worthy clients deserve the highest quality professional service, then one need not be overly concerned with the numerous, invisible others.

Another factor reinforcing the tendency toward homeostasis is the chaotic nature of information about the blindness system. Associated with this is the systematic failure of most agencies to pursue followup studies. They simply do not make a practice of discovering what happens to their clients after service is completed and clients are discharged from agency care. As a result, the entire system is deprived of, and protected from, the opportunity to learn from its successes and failures.

□ During the past 25 or 30 years, there have been a few significant innovations in serving the blind. Because new technologies and methods must play a large role in any improvement in service to the blind, it seems worthwhile to consider two of the more interesting cases of innovation.

The only important technical innovation in travel for the blind in this century has been the "long cane" method, which is the invention of Dr. Richard Hoover. It consists in replacing the old orthopedic cane with a light, long cane, the purpose of which is to sense the environment rather than to serve as a support. The long cane precedes the training foot in an oscillating motion and permits the skillful user to move rather rapidly over varied terrain. Hoover, a former physical education instructor, developed the cane while serving in a U.S. Army group set up to provide rehabilitation for blinded World War II veterans. At the time, accepted practice in the blindness system was to assume that the blind have little capability for travel and that what little such capability could be developed required instruction from a teacher who was himself blind. (This approach is still in currency in many sectors of the blindness system.) The group of blind veterans were for the most part vigorous and healthy. They found that little or no rehabilitation had been prepared for them, and they besieged the commanding general, pounding with their canes on his desk, demanding the program they had been promised. It was in this context that Hoover was given an opportunity to develop and teach his method. That method was revolutionary in its assumptions that the blind could travel independently, that a long antenna-like cane could help them, and that a sighted instructor could teach them.

The introduction of the long cane technique was an unusual event which was quite out of keeping with the traditional behavior of the blindness system. Seen against the backdrop of such traditional behavior, three special circumstances characterize its introduction. First, the champion of the invention was an "outsider." Hoover had previously worked in blindness agencies, but merely as a physical education instructor. It was only later that he became an ophthalmologist. Second, the invention was precipitated by a dislocating, crisis-like event for which the system had no prepared response. And third, there was a strong and active group of blind clients who were in a position to make demands and to enforce them.

Consider, as a second case, the entry of blind children into public schools,

The Sources of Innovation

The "long cane"

Three special circumstances

Blind children in public schools

which dates from the 1950's. Previously, it had been assumed that blind children could be educated only in a separate school which provided them with the security of being together and which catered exclusively to their special needs. The story of the opening of public schools to blind children is connected to a disease called retrolental-fibroplasia, which affects premature infants and which was discovered in the 1950's (a story in itself) to be a consequence of excessive oxygen delivered to the infants in their incubators. Premature infants reared in incubators tended to be children of middle class parents. The movement to introduce blind children into the public schools and to provide a program of supplementary aids in reading and communications skills, began among groups of middle class mothers, initially in California, who found the physically segregated education offered their children repellent and who organized to develop an alternative to it.

Again, there were two special features of this innovation in services to the blind. First, there existed a crisis situation created by a demand the system was not prepared to handle. The number of retrolentals grew precipitously in the 1950's and declined soon after the cause of the disease was discovered. And second, there was a strong and active group of service-users, in this case relatively well-to-do, who organized to enforce their demands.

It should not be supposed that innovations are an untarnished good. Characteristically, innovations which at the time represent humane advances—the vocational rehabilitation movement of the 1940's comes to mind—survive to inhibit the system's response to the *next* requirement and thus become a part of its dynamic conservatism. Any new innovation achieves success and acceptance only through a kind of warfare on the old.

□ Several requirements for change have so far emerged. First, the blindness system should reallocate its priorities so that it makes a firm commitment to encounter every blind person. Second, the system should reallocate its priorities toward subcategories of the blind so that the design of its services reflects changes in the make-up of the blind population. Third, the organization and technology of services must be restructured so that services are appropriate to the needs of the great majority of the blind and so that current manpower constraints can be circumvented. Fourth, the social systems and supporting ideologies of the blindness agencies must be made compatible with the restructured priorities and services. Finally, the methods of data gathering and processing must be changed so that the blindness system can become an effective learning system.

Some of the specific kinds of change flowing from these requirements are as follows:

Diffusion of best practice. One of the characteristic features of the blindness system is the large gap between agency practice considered "best" by experts inside and outside the field, and the practice of the majority of agencies. This is true even of a new technique like the long cane, which has made surprisingly little progress in penetrating the blindness system since its introduction in the 1940's. The same is true of training in low vision aids, comprehensive rehabilitation, and the public school track for education of

Special circumstances again

A Strategy for Change

Diffusion of best practice

blind children. In the case of services for multiple-handicapped children and the aged the gap is so great that best practice is virtually the *only* practice. In the language of business, there has been very little market penetration, and the reasons for this lie largely in the fragmentation of the blindness system.

It has become clear that the mere existence of pilot projects does not of itself insure widespread adoption of new practice even if that practice is of established effectiveness. The dynamic conservatism of the system means that an active strategy of change is required—one that creates pressures and incentives for the building of new capacity at the same time that it creates demand for that capacity. Demonstration, information-dissemination, and training are necessary but not sufficient conditions for the diffusion of best practice.

New models of integrated service. There exists a pressing need for integration of services to the blind. On one level, services related specifically to blindness (training in reading or mobility, for example) must be integrated with services relating to health, employment, or financial support so that a blind person need not negotiate several totally disconnected systems. On a second level, services relating to the improvement or use of residual vision must be integrated with services relating to blindness. Low-vision aid clinics, generally limited in their scope to aid in reading, tend to be disconnected from the bulk of services to the blind, which proceed as if the client had no vision at all. And finally, there is a need for *reintegrating* services around *new* characteristics of the blind person. Given the increasing incidence of the aged blind and the rising rate of multiple-handicapped in that group, it is relevant to ask if services to the aged might more effectively be organized around age rather than around blindness.

All such forms of integration would require the establishment and management of networks of service—that is, of linked arrays of agencies. There would be far greater emphasis than at present on infra-structure functions like admissions, screening, diagnosis, referral, “tracking” individuals through the system, guidance, and evaluation. Network management would emerge as the central form of leadership within the system.

Power in the hands of users. If the idea of integration points in the direction of a greater connectedness in the blindness system, then the notion of vesting power over service in the client points in the direction of a special kind of decentralization. Such a change would affect not only the manner in which services are delivered but the process through which services change over time, both of which would become rather like a market mechanism. At least three variants on this theme suggest themselves:

(1) Establishment of “contract managers.” These agents would be separately funded to provide services to given populations of the blind but would not manage service-providing bureaucracies. Instead, they would contract with other agencies, old and new, to provide services on request. Contract managers would have the freedom to shift contracts on the basis of observed per-

New models of integrated service

Power in the hands of users

“Contract managers”

formance. The intent would be to free managers from the job of maintaining their own bureaucracies and hence from the pressures to optimize the use of their own staffs.

(2) Establishment of ombudsmen for the blind. Their function would be to help blind persons negotiate the service system. Independently funded, they would represent the interests of the blind in dealing with the agencies.

Ombudsmen

(3) Direct payments to the blind. The blind could be given funds with which to purchase services, either from established agencies or from new ones that might come into being to serve a new market.

Direct payments

□ None of these changes will emerge from a single approach which relies for its effect on the manipulation of one factor alone, such as manpower, funding patterns, or ideology. The dynamic conservatism of the blindness system has multiple roots which will yield only to multiple attack. Such a multiple attack must be of a "critical mass" appropriate to overcoming the system's conservatism. It must embrace a number of programs which are mutually consistent or at least not mutually inhibiting. It must address itself to the few leverage points in the blindness system. And perhaps most important of all, an effective multiple approach must insure that the blindness system will become an effective learning system. The system will not learn what to do unless it becomes more capable of learning; it will not act on the basis of its learning unless it is made to do so by forces which are commensurate with its own resistance to change.

Conclusions

1. Robert A. Scott's recent study, *The Making of Blind Men*, (New York: Russell Sage Foundation, 1969) is a penetrating analysis of the "blindness system," and I should like to take this opportunity to acknowledge my indebtedness to it.

2. In my experience, such a state of the data is the norm rather than the exception. That is, the situation with respect to data on blindness does not seem very different from that of other social or medical problems. The statistics on crime, for example, or on the disabilities of children, or on the numbers of the mentally ill are similarly divergent, vague, and fragmentary. In each such instance, the data often say more about the reporting systems than about the problems reported. Police Commissioner Leary, for example, is said to have doubled the crime rate of New York City in one year by enforcing a more stringent reporting of crimes. The state of Kansas was able to "increase" the turnover rate in its mental hospitals by confining old patients to facilities classified as geriatric rather than as hospitals for the mentally ill.

3. Even when the standard Snellen charts are used, serious questions of methodology arise. The Snellen chart lacks fine graduations between 20/100 and 20/200, yet this range is the most critical from the standpoint of classification. (Anyone whose visual acuity is less than 20/100 gets tested next at 20/200.) Moreover, the Snellen chart measures only distance vision; it does not test near vision, which is a better criterion of visual ability. It also does not measure other components of visual performance, such as uniformity of field. Taken by itself, the Snellen chart indicates mainly the ability to read a Snellen chart: it does not indicate whether the subject has useful travel vision, reading vision, or other visual capabilities.

4. See the study conducted by the Bureau of Labor Statistics for the American Foundation for the Blind, "National Survey of Personnel Standards and Personnel Practices and Services for the Blind—1955."

5. Although the money costs of this third system are important, the problem of manpower resources constitutes an even more powerful constraint. It is estimated that the official blindness system employs approximately 10,000 today. *For a blindness system designed to optimize the human functioning of the entire blind population of the U.S., ap-*

Notes

proximately 118,000 employees would be needed. (The bulk of them would be engaged in providing services to those over the age of 44.) Even under the principle of "least cost to the system itself," 68,000 employees would be necessary if the system were to encounter all of the blind.

These estimates are based on the assumptions that all blind people would be covered, that programs would be designed to meet the special disabilities and potentials of different categories of the blind, and that there would be no change in current methods and technologies. *Clearly, it will be impossible to assure universal coverage of the blind until radical improvements are made in the character of services, the structure of jobs and manpower in relation to services, or in the technology of services to the blind.*

World Council Resolutions

The World Council for the Welfare of the Blind passed eight resolutions at its Fourth General Assembly held October 6-18, 1969, in New Delhi. The following summary of those resolutions reflects the concerns of the Assembly and the actions recommended by it.

1. *A Plea for Public Awareness.* The Assembly encouraged programs of public education to focus attention on the following facts: there are at least 15 million blind people in the world; the number could double by the year 2000; two-thirds of this blindness is preventable; much of it is correctable; 90 percent of the world's blind children receive no systematic education; 5 million blind adults could be rehabilitated; and modern technology, if directed toward the problems of blindness, could make decisive advances.

□ 2. *Technology and Equipment.* The Assembly reaffirmed the Council's philosophy of encouraging the total integration of blind people into the sighted community; encouraged continued technological research, more use of the International Research and Information Service, and continued reduction of the costs of basic equipment.

Technology

3. *Prevention and Cure of Blindness.* The Assembly resolved to increase the cooperation of the Council with the World Health Organization and the International Association for the Prevention of Blindness; to encourage the establishment of new programs of prevention of blindness and to support the efforts of already existing programs; and to urge that UNICEF and other research organizations devote more energy to investigating the causes of blindness.

4. *National and International Action.* The Assembly urged that each national delegation encourage agencies to strive to meet the standards for service set by the Council; that programs of aid to foreign countries be increased; that agencies in developing countries encourage greater participation in programs by their governments; that international health and welfare organizations give adequate priority to problems affecting the blind and increase their aid and cooperative efforts.

☐ 5. *Education.* The Assembly recommended that efforts be made to extend adjustment services to every blind person; that education of the blind should be extended to whatever level would benefit the individual; and that high standards for educational personnel be maintained.

Education

6. *Economic Opportunity.* The Assembly urged that rehabilitation be considered a right of every blind individual; that blind people have the opportunity for employment equal to the sighted; that high standards for rehabilitation personnel be maintained; and that rural training facilities be promoted in developing countries.

7. *Legislation.* The Assembly recommended that every country have laws protecting the rights of the blind in employment, education, rehabilitation, and vocational training and insuring allowances to compensate the expense of being blind and to provide for those who are without income or are unable to work.

8. *Representation.* The Assembly agreed that organizations of the blind were to be represented in national delegations to the Council and urged the cooperation of organizations for and of the blind.

☐ The complete text of the resolutions of the Fourth General Assembly of the WCWB have been published in *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London, W1N, 6AA, England) Vol. 53, No. 631, November 1969, pp. 281-86.

Text Available

Activities for the Handicapped Adapted at Auburn

Members of the staff of the School of Education, Auburn University, Auburn, Alabama, are engaged in adapting certain recreation activities for handicapped persons. Headed by Rudy Davalos, coordinator of recreation, these efforts have produced several adaptations that have subsequently been used in the workshops and rehabilitation centers in Alabama, including the Department of Adult Blind and Deaf at Talladega.

☐ One of the most successful adaptations developed at Auburn is horseshoes for the blind. Modifications of the game include putting distinguishing grooves in the shoes; attaching a six-foot, six-inch rope to each stake for determining scoring tosses; the use of a gravel area between the stakes and chain link fences (with small bells attached to them) behind the scoring areas for determining audibly if tosses are short or long respectively; two 20-foot ropes installed along the sides of the horseshoe area to be used as guidelines; and directional blocks connected to large bells at each end by underground cables for tactually and audibly determining the direction and distance of the target stakes. Garden rakes are used to aid in finding the tossed horseshoes. Scoring is modified to include points for not only ringers, but also for tosses within a six-foot, six-inch circle around the stake. The overall dimensions of the playing court are the same as in regulation horseshoes.

Horseshoes for the Blind

Detroit School Students Evaluate Mobility Education Program

Educators and others in the field of work for the blind have long recognized the value of mobility education for visually handicapped children and almost always have a positive attitude toward mobility training. Moreover, teachers of the visually handicapped usually encourage the acceptance of mobility education by students and their parents, and sincerely believe that quality mobility instruction provides children with the necessary techniques, skills, habits, and attitudes needed to navigate safely and independently indoors and outdoors.

□ The mobility education program in the Detroit Public Schools began in 1962 as part of a federally-supported demonstration grant. The Metropolitan Society for the Blind, Detroit, received the grant to provide part-time mobility instruction for day-school, visually handicapped children in the Detroit Public Schools as well as Wayne, Oakland, and Macomb County Schools. Before the termination of the grant the Detroit Board of Education, upon the recommendation of the supervisor of classes for the blind and partially sighted, hired its own mobility specialist to offer mobility services to visually handicapped children in the Detroit Public Schools. Most of the work of the mobility specialist is supplemented and reinforced by resource teachers in the department of special education—almost all of whom have participated in mobility workshops.

Mobility education in the Detroit Public Schools involves basic orientation, pre-cane skills, cane skills, and sensory training (learning to make use of kinesthetic, tactile, olfactory, and auditory clues). An effort is also made to provide the child with a meaningful understanding of his environment and to give him adequate skills that will enable him to explore and to move at will in his environment.

The planning for mobility education in a school program is based on the following ideas: 1) immobility is not an insurmountable problem for a visually handicapped child; 2) travel techniques developed for adventitiously blinded veterans and adults can be adapted for use by congenitally blind and adventitiously blinded children; 3) a mobility program from which the child can benefit during his school years allows him to accept and participate in travel experiences similar to those of his sighted peers; 4) positive attitudes may be developed toward independent travel when a child is given regular lessons in mobility and systematically learns to cope with the inherent dangers of travel; 5) mobility adds to the child's physical and mental development and enhances his relationships with others in school and in the community; and 6) the school setting provides many travel opportunities which will help the child view independent travel as a useful skill.

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Federally-supported Demonstration Grant

Basis of mobility education program

□ Teaching a blind child to travel indoors and outdoors is a complex process. As a result of receiving mobility lessons, the child is expected to travel safely and with comparable ease over the areas and routes that he has been taught. In addition, he is expected to be able to transfer and apply certain mobility principles to new and unfamiliar surroundings. We also observe that if children are to adjust to travel situations in a large metropolitan area, they must be capable of reasoning, solving problems, and interpreting many environmental clues. Each child is different in ability, knowledge, personality, motivation, and readiness, as well as in his need for travel independence. Therefore, rigid standards for independent travel are not set, but each child is evaluated by the mobility specialist individually to determine his need. As soon as it is decided that the child can benefit from formal instruction, the mobility specialist sets goals and plans lessons for him. There are, however, these two general standards for independent travel: 1) it is hoped that pupils will be adequately prepared to travel in their school and home environments and be able to travel to or from school before completing junior high school; and 2) all senior high school students are expected to travel to and from school and to school activities independently.

Since mobility education became a part of the school program of many of the nation's public and residential schools serving visually handicapped children, little information is found in current literature that reveals the reactions of students who have received mobility training. Although mobility education for school children as offered by certified peripatologists and orientation and mobility specialists is still relatively new, there are questions that can and should be answered with regard to the value of mobility instruction to the children themselves. We feel that children who have received mobility training can offer mobility specialists, as well as other professionals in the field of work for the blind, information regarding the importance, value, and worth of mobility education.

There are 41 normally functioning blind students in grades seven through 12 in the Detroit Public Schools, and 34 (82.9 per cent) of these children travel to and from school independently. Thirteen of the 34 independent travelers have sufficient residual vision to enable them to travel safely, unaided, and without a cane. These children with travel vision have received eye examinations from the Franklin School Vision Clinic, a mobility evaluation facility, and have participated in group discussions regarding mobility. They are not, however, included in this survey since their travel experiences have always been very similar to those of children with normal vision, and our work with them was only to increase and improve their travel proficiency.

□ The Detroit school children selected to participate in this survey are the 21 braille students who have received sufficient mobility training and whose progress has enabled them to travel to and from school independently. These children are also proficient travelers in their school and home neighborhoods and moderate size business areas. Sixteen of these children (76.1 percent) are in grades 10 through 12. The majority of the children (14 or 66.6 percent) were traveling independently before completing the ninth grade, and

Aims of Mobility Education Program

Reactions of students to training not often sought

21 Children Surveyed

all 21 children were traveling independently before completing the 10th grade. Only five children (23.8 percent) have been traveling less than a year, and 13 children (61.9 percent) have been traveling two or more years. Table I shows the visual acuity of the survey group by sex. The majority of the children (57.1 percent) have light perception or are totally blind, and none of the children have vision greater than 10/200.

Visual Status	Male	Female	Total	Percent
Absolute Blindness	4	3	7	33.3
Light Perception	3	2	5	23.8
Motion Perception to 5/200	2	1	3	14.4
6/200 to 10/200	1	5	6	28.5
Total	10	11	21	100.0

Those participating in this survey were selected for the following reasons: 1) their vision was nil or so limited that safe independent travel was not possible without a thorough program of mobility education; 2) these children use white canes which easily identifies them as being blind and exposes them to the various attitudes of the sighted public; 3) these children received taxi services from the Detroit Board of Education prior to becoming independent travelers; and 4) these children were restricted in outdoor travel experiences by their parents before adequate orientation and mobility services were made available to them.

None of the children live close enough to their school to walk the entire distance. In fact, eight of these young people (38 percent) must take two buses to reach school, and only two children (9.5 percent) are able to reach school by using only one bus. Most of these children spend 30 minutes to an hour in traveling to or from school.

□ The 37-item questionnaire administered to the 21 children in this survey was mainly concerned with the benefits of independent travel and the pupils' attitudes toward it. The questionnaire showed the following results:

1. All the children stated that they like being responsible for their own independent travel and enjoy the opportunity to make decisions and solve the problems they sometimes encounter. They feel safe as they journey to and from school, and 19 children (90.4 percent) felt that mobility education required them to think rationally and exercise sound judgment.
2. None of the children have experienced any accidents requiring professional medical attention while traveling independently. One child did strain her ankle when she missed a sidewalk curb. However, she was treated by the teacher (school health services) and insisted on traveling home independently.
3. All the children thought that the mobility techniques taught to them were adequate and enabled them to navigate safely and proficiently.
4. Twenty of the children (94.2 percent) stated that independent travel has increased their understanding of the varying attitudes which sighted persons have regarding the blind.
5. All of the children felt that their peers (sighted and blind) have a more

TABLE 1
Visual Acuity of Survey Group
by Sex Distribution

Selection criteria

Questionnaire Administered

No serious accidents

Attitudes of peers more positive

positive attitude toward them because of their ability. In addition, 20 of the children (95.2 percent) stated that their parents approved of their travel.

6. All of the children believe that mobility education is a worthwhile and meaningful course in the school curriculum. Many of them, 13 (61.9 percent), felt that the resource teachers in cooperation with the mobility instructor were mainly responsible for their desire for independent travel.

7. Most of the children (90.4 percent) have not had more frequent colds or other sicknesses since they started independent travel. Only one child attributed her increased frequency of colds to being more frequently exposed to the weather because of independent travel.

8. All of the children believed that independent travel has enhanced their job opportunities and opportunities for higher education and will be helpful to them in adulthood. In fact, 20 of the children (95.2 percent) reported that they now take non-school related trips to such places as the homes of relatives and friends, stores, amusement parks, movie theaters, the physician's office, and the studio for music lessons.

9. All of the children stated that mobility education increased their knowledge and understanding of their homes, schools, and community environments.

10. Sixteen children (76.1 percent) reported that they usually stopped for refreshments such as malts and candy on their way home from school.

11. Thirteen children (61.9 percent) participate or have participated in school activities requiring them to be at school before or after regular school hours. The children stated that independent mobility enhanced and assured their participation in such activities as band, glee club, dances and parties, student council, foreign language clubs, National Honor Society, Afro-American club, human relations club, Future Teachers of America, and the school-work program.

□ Answers obtained from this survey clearly reveal that children hold positive views regarding mobility education. The desire for independent mobility and travel is usually brought about by the joint efforts of the resource teachers and parents in cooperation with the mobility instructor. When this is done, the children themselves feel that they derive multiple benefits from independent travel and have positive attitudes towards it.

Advantage taken of new skills

Conclusions



Left: Mobility instructor John Evans Thomas watches student Ronald Durrell practice mobility technique for descending stairs. Right: Blind Detroit public school students on a field trip learn techniques for travelling by bus as part of the mobility education program. Photos courtesy of the author.

When You Meet a Blind Person

During the summer of 1962, while working as a mobility instructor at the Ohio School for the Blind in Columbus, I had occasion to work with a teenage blind girl near the Ohio State University campus. One day, upon reaching the street corner, she found the curb with her cane and listened carefully to the traffic sounds, trying to find a break in the traffic so that she could cross the street safely. As she waited, a foreign student, perhaps from India, observed her with a solemn, puzzled look. After a couple of minutes of serious deliberation, he walked over to the young lady. Without saying a word, he grabbed the tip of her cane and pulled it horizontally across the street. The girl, holding on for dear life, followed passively behind her cane!

□ In this incident, we can see at once the good intentions of sighted people toward blind people and their general lack of information and technique for dealing with them. In a way many of us are foreigners when it comes to dealing with blind people because, for the most part, we have little direct contact with them. With this in mind, the aim of this paper is to provide some ideas, some practical do's and don't's about meeting a blind person and how to be most helpful, without stepping on each other's toes—the physical or the emotional ones.

Perhaps you have never met a blind person. This is not surprising since there are relatively few blind people in this country—perhaps half a million who are legally blind. Of that number, less than 10 percent are totally blind; the vast majority of legally blind people have a considerable amount of residual vision. Another reason might be that you have avoided such a meeting because you were unsure about what to do and what to talk about.

It may be useful to become aware of some basic differences among blind people. One basic difference is between those who are totally blind and those who are partially sighted. Some sighted people mistakenly believe that only those who are totally without sight are considered blind. Differences are also related to the time in life when blindness occurred. Those blinded from birth or during the first five years of life experience blindness as an integral part of their mental and emotional growth. This group is referred to as the congenitally blind. In contrast, those who become blind later in life, known as the adventitiously blinded or newly blind, are faced with the task of integrating blindness into personalities they developed as a sighted person. Some people become blind suddenly as a result of an accident, others gradually over a period of time due to a disease. Of course, there are volumes written on the causes and effects of

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Good Intentions Not Enough

Differences among blind people

blindness, and the more information you gain on the subject, the more effective you will be as you interact with a blind person.

□ Meeting a blind person is much like meeting any other person. The same rules of courtesy and tact apply. Common sense is sufficient to cope with most new or sensitive situations. It will also help if you do not assume that a blind person is helpless, that he is either gifted or defective, that he is hard of hearing or an accomplished musician. Blind people are as different from one another as are sighted people. Some have the ability to put you at ease, others do not. Don't let a person's blindness keep you from seeing him as a unique individual, with assets and faults like anyone else.

When you first meet a blind person, take a little more initiative than you ordinarily might. Begin by making your presence known with a casual hello or other appropriate greeting. Even though you may have met the person before, avoid playing games like "Guess who I am?" It is best to identify yourself right away.

You may wonder whether you should shake hands. This question should be handled just as you would when dealing with a sighted person. One difference is that the blind person who wants to shake hands with you may make only a small gesture, moving his hand slightly upward from his side because he does not know exactly where your hand is or whether you wish to shake hands with him. If you see his hand make such a movement, reach for it, even though it requires you to go more than half way. When meeting a blind child, it is a good idea to reach for his hand even though no gesture is made by the child. This physical contact gives the child concrete evidence of your presence and replaces the friendly smile or nod that he cannot see. This is also a small way to help the child to develop social skills.

If the blind person is with someone else, do not use his companion as an interpreter for what you want to say to the blind person. Speak directly to the blind person, aiming your eyes and voice at his face. In this way it is easier for the blind person to tell when you are talking to him and it is simply the same courtesy you would extend to the person if he were sighted. Don't raise your voice on the assumption that he is deaf. Speak in a normal, natural tone of voice. It may be a strange experience at first to talk directly with someone who cannot see you. Your reaction might be to say as little as possible because you are not sure that he understands you or how he is reacting to you. This uncertainty is natural and can be overcome in time with experience, once you get into the give-and-take of ordinary conversation.

Regarding the subject of blindness, don't feel that you must talk about it and don't feel that you must not talk about it. If it comes up naturally in the course of a conversation, and both of you feel comfortable with it, go ahead and discuss it. You should avoid expressions of pity and references to blindness as an affliction. This irritates those who are reasonably adjusted to their blindness and discourages those who have not yet reached that stage.

Meeting a Blind Person

Shaking hands

Speak directly to the blind person

Talking about blindness

There may be times when you wonder whether a blind person needs your help to get from one place to another. When in doubt, the best idea is to ask the blind person if he would like some assistance. Your question should be in an off-hand manner that does not sound condescending or maudlin. If your offer of help is turned down, do not insist on helping anyhow. You should assume that the blind person knows his own mind—that if he wants your help he will accept it. If your offer is accepted, don't provide any more help than is necessary in a given situation.

□ Assuming that you are going to lead a blind person, what is the best way to go about it? Control your natural impulse to grab his arm and push him ahead of you. This arrangement is awkward for both of you. The blind person will have a greater sense of security and direction if he holds on to your arm just above the elbow. You take the initiative in this by asking him to put his hand there and, at the same time, placing his hand above your elbow with your free hand. If a blind person is experienced at being led, it may be sufficient to touch his arm with your elbow and he will automatically reach for it. You can walk with the blind person on either your right or left side, depending on what seems most comfortable for both of you. Needless to say, leading a blind person should be done as inconspicuously as possible, without bringing undue attention to either of you. Although a blind person cannot see the people around him, he senses their presence and their reactions as much as anyone else does.

The arm you use for guiding can be either bent at the elbow or hang straight down, as you prefer; the important thing is to relax your arm. Tension in your arm can be detected by the blind person and this might reduce his feeling of confidence in you as a reliable guide. After all, he is placing his safety in your hands and he will want to know how much he can trust you. So try to relax. With experience you will find that leading a blind person is not as difficult as it might seem at first.

Ordinarily you should walk slightly ahead of the blind person—about one half step. This makes it easier for him to follow the motion of your body. It will also help for both of you to walk in step with each other and fairly close together, but not quite shoulder to shoulder. Don't let the blind person lag a full arm's length behind because it is more difficult to lead him, especially when in narrow passages and when making turns. On the other hand, if he gets too close to you, he is likely to trip over your heels.

There is no absolute rule about how fast you should walk with a blind person. Here again, use common sense and be sensitive to his needs. If you are walking too fast, you will feel the blind person pulling back on your arm. You should respond to this by slowing down. If you walk too slowly, the blind person may keep trying to walk ahead of you. His idea of a comfortable walking pace may be quite different from yours, especially when walking in unfamiliar territory. However, an experienced traveler may soon grow impatient with a walking pace that is overcautious. When starting or stopping, try to do so gradually and smoothly, avoiding any sudden or unexpected movements. Walk in as straight a line as pos-

Leading a Blind Person

Walk slightly ahead

Walking pace

sible, making turns only when necessary. As you get to know a blind person better, your cues to him become more subtle and less verbal. You will soon develop signals that are passed almost unconsciously between the two of you. You become accustomed to each other and begin to function as a team.

If you happen to be leading more than one blind person at a time, place both of them on one side, the one having the most vision on the outside. At best this arrangement is difficult, for the guide as well as for the blind persons; and so this practice should be used only when absolutely necessary.

□ When walking through a narrow doorway, it is difficult for both of you to move through side by side. You can either turn sideways, so that both of you are sidestepping through in single file, or you can bring your elbow toward the middle of your back; the blind person walks almost directly behind you, but not close enough to step on your heels. If the door needs to be held open, ask the blind person to hold on to it as he passes through. It is a good idea to involve the blind person actively whenever practical, giving him the feeling of participation rather than one of passive dependency. If the door is hinged on the side opposite the blind person, he can either switch to your opposite side or just switch his hand to your other elbow.

Doorways

As you go through the doorway, try to maintain a steady forward movement, avoiding unnecessary twists of the body which can easily confuse the blind person and cause him to become unsteady. Make sure his fingers don't get caught in the crack of the door as it closes! Keep your eye on your companion until he is completely through the door. Having managed the door safely, don't make the mistake of stopping to talk with the blind person's back to a door that may open unexpectedly. The same applies to having him stand with his back to a flight of stairs—one small step backwards and he would be in trouble.

Since you do take a certain amount of responsibility for the blind person when leading him, it is quite possible that you will feel afraid that he may hurt himself. Perhaps this fear, more than any other factor, can make you nervous and less effective. Within reasonable limits, anxiety is good because it keeps you on your toes, doing your utmost to ensure the safety of the blind person. But it is difficult to be responsible for two bodies instead of just one. Not infrequently you will be looking ahead to locate obstacles, and may not notice that the blind person is bumping into an obstacle that you have already cleared. On the other hand, if you keep your eyes on him too much, you may very well bump into some obstacle yourself. In time you will develop the skill of alternating your vision from looking ahead to watching the blind person. Make sure he has cleared the obstacle before you take your eyes off him.

Locating and avoiding obstacles

Inevitably the blind person will bump into something while you are leading him. Most of the time these bumps will not be harmful, other than jarring his confidence in your ability to lead. When a bump does occur, don't draw attention to it; assuming there was no real harm done, pass it

When he bumps into something

off lightly. At the same time, try to realize why the accident occurred so you will not make the same mistake twice. There may be times when, for one reason or another, you do not wish to guide a particular blind person. For example, he may become demanding of your services and take them for granted, as something you were obligated to provide for him. When this situation develops, take a firm stand on setting limits on your services as a guide, which are, after all, voluntary.

□ No doubt during your travels with a blind person you will have to deal with stairways. Approach the stairs head-on rather than at an angle. This gives the person a better idea of a straight direction down the stairs. Also, as you approach the stairs, be sure to mention whether the steps go up or down. Pause when you get to the edge of the first step. Have the blind person touch the edge of the first step with his foot so that he knows exactly where it is before he starts down. You might want to describe briefly how long the stairway is, how wide, and how crowded. As you start down the steps, stay one step ahead of him because this makes it easier for him to follow and he can detect when you have reached the bottom landing, making it less likely that he will mistakenly take an extra step that is not there. While walking down move at an even pace that is somewhat slower than the pace used at ground level. Use these same pointers while going up stairs, still staying one step ahead of him. He may feel more secure, either going up or down stairs, if he holds onto a bannister with his free hand. This is especially true for a newly blinded person, or for someone you are leading for the first time on an unfamiliar stairway.

Stairways

Another situation that requires special attention is helping a blind person into a chair. When you reach the chair, place his hand on the seat of the chair and then place the same hand on the top of the chair's back. In this way he can slip into the chair knowing exactly which way it is facing and where the back is. If you put his hand on the back of the chair but not on the seat, there is the danger that he may end up sitting on the floor, not having learned which way the chair was facing. Position yourself near the chair as he sits down so you can help out if he has any trouble. Make sure he has physical contact with the chair before you turn away; don't just say "there's the chair," and then walk away unless you are familiar with the person's abilities. Once he is seated, you may give a verbal description of where the chair is located in relation to other objects and people. This will give him a sense of orientation, especially if you have to leave him alone.

Sitting on a chair

□ As for getting seated in an automobile, it is best to give the blind person information so that he can enter it himself, rather than being led into it on your arm. Let him know which way the car is facing by having him touch the hood or the windshield wipers; then have him find the door handle. Be sure to let him open the door himself. With one hand he can hold on to the edge of the roof and duck his head under his hand, thus preventing a head injury on the metal roof. Feeling for the seat with his other hand, he can easily slide into place. For a beginner, stand close by until

In and Out of Automobiles

he completes the operation to make sure that he can handle it. When leaving the car, the hand should go on the roof again, the head being ducked underneath it. If the blind person has a cane, it should be taken into the car only after he is seated; it is then placed upright between his knees. Leaving the car, the cane goes out first. By using this procedure there is less chance of his stumbling over the cane.

When finding a seat in an auditorium or theatre, the guide leads the blind person in the usual way into the row of seats. Both side-step together until they are in front of their seats and then sit down. Going out of the row, cross in front of the blind person and then lead in the usual manner.

Using an escalator is similar to the procedure for walking up and down stairs, except that the idea of a moving stairway can create more anxiety in you and in the blind person. Therefore, more attention and preparation is called for. Let him feel the handrail and then get his feet near the edge of the first moving step. Step on to the escalator with as smooth a motion as possible, watching carefully as the blind person gets his balance and adjusts his feet. Stay one step ahead of him as you would on ordinary stairs; in this way he can feel you level off at the top of the escalator.

☐ You may have occasion to go to a restaurant with a blind person. There is nothing wrong with reading the menu to him, unless he already knows what he wants. When the waitress takes your order, be sure she takes the blind person's order from him and not from you. If he needs the salt shaker or an ashtray, it is easier to touch the ashtray to his hand than give elaborate verbal directions. If he requests help cutting his meat, do so inconspicuously. At the end of the meal, give him the check for his dinner and let him pay the cashier himself. This is one small example of how you can help the blind person maintain his dignity as an independent human being, even though in certain practical respects he must depend on others.

If you are in a situation where you have to give directions to a blind person, use concrete, simple words. Pick out the outstanding landmarks on the trip you are describing, and don't get bogged down in a lot of detail that can confuse more than help. Avoid using compass directions unless you are sure about them and in your judgment the blind person understands your references to north and south. This is also true about using the simple terms left and right; it is surprisingly easy to stumble over these apparently easy directions and say exactly the opposite of what you mean. After giving a set of directions, it is a good idea to ask the blind person to repeat them to you, so that you can correct any errors before he begins the trip.

☐ It is likely that some blind people you meet will be carrying a cane. While being led by you, he may touch the ground occasionally in order to have some contact with the environment and to add to his feeling of confidence. This does not mean that you have any less responsibility for him; it is just another sensor for him. Usually he will not use the cane when being led. He may cradle the cane on his elbow, keeping it out of his way and yours. The blind person may have a folding cane which can easily be folded and put in his pocket when not in use. If the cane does interfere with

Auditorium and theater seating

Escalators

Restaurants

Giving directions

Mobility Aids and Devices

your guiding the person, discourage its use. When walking in crowded areas, see that the cane does not extend so far ahead that it trips other people.

If the blind person has a dog guide, follow basically the same procedures that apply to a person without a dog. Ask if he needs help, even though he may appear to be totally independent with his dog. If he accepts your offer of assistance, have him hold on to your arm in the usual manner. In this case, it will require more attention on your part because you are now concerned with three body widths. Be sure not to go up escalators with a dog guide because his paws might get caught in the moving stairs.

Electronic devices are slowly coming into use by blind people as travel aids. If you encounter a person using one of these devices, don't be intimidated by its novelty. He is still a human being and can be approached just as though he were using any other kind of travel aid. The electronic device and the dog guide may serve as an interesting basis for a conversation.

One final idea that might be helpful in developing your understanding of blindness is to put on a blindfold and perform some of the tasks mentioned in this paper and other ones you can think of that a blind person must cope with in his everyday life. Because there are obvious dangers involved, especially for the fearless beginner, be sure to have proper supervision when you do so. Such experiences may prove more valuable than any reading you may do on the subject.

☐ In conclusion there are no fixed rules for being with blind people. They are simply people who do not see well or do not see at all. Relating to them with common sense and sincerity will enable you to deal with nearly any situation. The ideas and pointers presented here are not absolute, nor do they touch on all possible situations you may encounter. But they may encourage your first moves in the direction of a blind person, and serve as focal points for your own thinking on the subject. In time, you will develop your own procedures which work for you and for the blind people you get to know.

Ed. note: Although the above article is of only marginal interest to professionals in the field of work for the blind, and therefore somewhat out of place in the New Outlook, it has been published here as a preview for the field. Sometime this summer, this article will be available in reprint form for use with individuals new to the field and with the general public in instances when a more abbreviated, one-page treatment would be insufficient. Up to 10 copies of the reprint will be free; information on prices for larger quantities will be available on request.

Dog guides

Try a blindfold

Conclusions

From the Field

From the Field is a continuing series of reports from the American Foundation for the Blind's regional consultants on new ideas and practices they have come across in their travels. This report is by Edward R. Murray of Region V (Montana, North Dakota, South Dakota, Wyoming, Nebraska, Colorado, Kansas, Oklahoma, New Mexico, and Texas).

In recent years educators of the handicapped have been providing learning experiences for children during "summer vacation" in keeping with the thinking of the many educators and parents who question the school that is empty for three months out of 12. Colorado, Texas, and Wyoming are three of the many states that now have such programs.

□ Colorado's Division of Rehabilitation, Services for the Blind Section, began its program for teenagers in 1968. The home teacher-counselors felt that high school juniors and seniors would benefit from a summer program stressing orientation and mobility, communication skills, skills of daily living, work evaluation and training, and psychological and vocational counseling. After a review of the register of blind persons it was determined that two six-week sessions would be necessary to accommodate the 18 teenagers selected. Evaluation of the 1968 sessions resulted in several changes for 1969. The major one was increasing the course's length to ten weeks, limiting the sessions to one, and the participants to 12.

Colorado

Students ranged in age from 16 to 20 years. Sixteen were male and 14 female. In 1968 there were equal numbers from public high schools and from the state residential school for the deaf and blind. In 1969 nine came from public schools and three from the residential school. Students not from the Denver area stayed in a boarding house near the training center—a new experience for many. The professional staff included staff of the Services for the Blind Section, an orientation and mobility instructor, and two volunteers.

The 1969 program put greater emphasis on vocations and more field trips, including visits to warehouses, department stores, computer sections, manufacturing plants, and a college. To improve socialization, a social event planned by staff and students was held one night a week. Most of the professional staff now feel that the ideal time to attend such a program is after the junior year in high school. Students then have another academic year to apply learned skills, modify social behavior, and think about a career. It is interesting to note that an independent decision to place more emphasis on vocational activities was made by administrators in both the Colorado and Texas programs following evaluation of the first year's sessions.

□ In 1968 a ten-week summer school was also begun at the Texas School for the Blind, Austin. Fifty students, age 12 to 21 years, took part in a full activity program that emphasized the development of mobility skills. For many, this was the first extended experience away from home; and also the first time they were responsible for such activities as making their bed or tidying up their room. The 50 students were from public or private schools.

Texas

Children with a severe sight loss had priority. The Division of Special Education, Texas Education Agency, administered the program. The participating agencies included the Texas School for the Blind, the Texas State Commission for the Blind, and the School of Education, University of Texas.

The 1968 program stressed orientation and mobility, home economics and living skills, physical education and recreation, home mechanics, and personal and group counseling. It was evident that instruction in note taking and in grade III braille was also needed. The 1969 curriculum was revised after evaluation of the 1968 session. The course's length was reduced to eight weeks and more emphasis was placed on social and vocational evaluation and on actual work experience. Vocational evaluation, vocational training, and a work-study program were provided on an ongoing basis. Several of the students had an opportunity to hold a job in the community—a "first" for most! A student body of 50 was again present in 1969. Most of the 1968 students returned for a second year.

□ In Wyoming, a two-week summer school, co-sponsored by Wyoming Lions Clubs and State Services for the Visually Handicapped, has been held for more than 20 years. Blind and visually handicapped persons from all over Wyoming meet at a mountain camp about 10 miles from Casper. For many years the student body was middle-aged and older adults. The program stressed arts and crafts, communication skills, music, and activities designed to improve socialization. During the past few years, and particularly in 1969, emphasis has shifted from older adults to teenagers. The curriculum now includes orientation and mobility instruction, activities of daily living with emphasis on self-care (very popular with men!), aptitude and psychological evaluation, plus individual counseling when indicated. Attendance is about 40-45, including 13 to 16 persons on the faculty. All state rehabilitation teachers and educational consultants participate in the program.

Wyoming

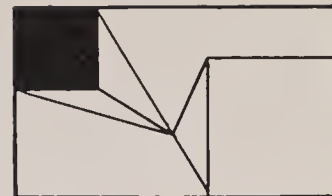
A New Physical Education Curriculum From MSU

Most of today's school physical education programs are geared to help the minority of children who need it the least, says Dr. Gale E. Mikles, head of the health, physical education, and recreation department at Michigan State University, East Lansing. "The 90 percent of students who really need to be taught correct physical development are neglected."

Dr. Mikles and his staff have conducted three years of physical education research and will be ready to initiate a unique program of physical education for elementary schools this summer. A junior high school program will be completed next year.

While present physical education programs demand that each child strive to perform well in every skill, the new program being developed by the MSU staff will teach the child to be aware of his own potential and will not force him to try something for which he is physically unfit. Emphasis in the program is on developing correct techniques and improving coordination.

Letter to the Editor



Dear Editor:

The Executive Committee, on behalf of the Northern Chapter of the California Association of Orientation and Mobility Specialists, would like to express concern regarding Mr. [James A.] Kimbrough's article entitled, "Concerning Certification of Orientation and Mobility Specialists" [*New Outlook*, November 1969].

While Hines Hospital was a leader for many years in developing O&M specialists, they terminated their training program over 10 years ago with the advent of the graduate curriculum in colleges. As a matter of fact, the VA standards usually call for a masters degree for employment as an O&M specialist. The point was well developed by James Carney et al, in a letter to the editor of the *New Outlook*, November 1969.

Hines and other agencies developed the philosophy of not training their own instructors for very good reasons. First, they found the quality of graduate O&M specialists superior to those trained in the agency training program. The expense of training a person was great. If the trainee did not measure up to the agency standards, nothing prevented that individual from working elsewhere and claiming to be an O&M specialist.

Graduate programs are able to hire staff from different programs, backgrounds, and experiences, as well as having supervised internship fulfilled at several agencies. The graduate student is exposed to many philosophies and points of view and this is one of the major strengths of the graduate programs.

Our association is also concerned

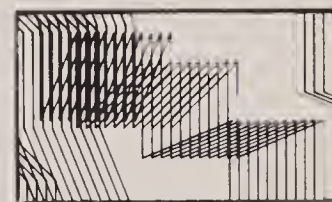
about quality control. Mr. Kimbrough says the Guild's program lasts only six months. This is half as long as the graduate program, yet presumably is trying to accomplish the same goals. While the curriculum sounds adequate (if the time element is ignored), it is also important to know who will be teaching the courses, and will the courses be rated against the same standards of a recognized graduate school?

Dr. Reid states that the Guild provides training of professionals in rehabilitation counseling, social work, and rehabilitation teaching, as well as in orientation and mobility. We feel the other disciplines will be as concerned as we are about the training given to personnel in their fields.

James L. Doyle, President
Palo Alto, California

Answers to Accreditation Questions

National Accreditation Council for Agencies Serving the Blind and Visually Handicapped



Q. Is there any way in which we can get help in paying the travel and maintenance expenses of the team that will review our operations after we have completed our self-study?

A. Here are four suggestions:

1. If your agency is a member of your local United Fund, you should, of course, include the cost of the on-site visit as a one-time cost in connection with accreditation. United Fund budget committees should readily accept a budget request to cover this, along with

other accreditation-related expenses, since accreditation validates the effectiveness of your services. One fund we know, which was giving almost no budget increases, recently was quick to give an increase for this purpose!

2. If your agency or school is not a member of the United Fund, we suggest that you approach any local foundation with a request for a grant to cover your estimated costs. One community foundation executive has told us that he feels that local foundations will be well disposed to such requests. In fact, if

funds are needed to help you bring your agency's or school's operations up to a specific standard, a local foundation might be receptive to a comprehensive special appeal for this purpose, since the grant would help to improve the quality of services available to blind and visually handicapped persons in your community. The donor would have the added assurance that any improvement would be certified by an objective body—NAC. Some agencies and schools have found their auxiliaries to be especially helpful in raising or pro-

viding such funds as those mentioned above.

3. Local service clubs such as the Lions, Delta Gamma, or other civic groups might be persuaded to support your preparation for accreditation as the club's project for the year. Club members might be willing to raise or contribute all or part of the expense that you estimate you will incur.

4. If yours is a state agency, we understand that federal-state funds may be used for this purpose.

Remember—the standards can be used to document your appeal for funds. The need to measure up to objective, widely accepted standards is one of the strongest points that you can make in interpreting your budget requests.

Q. Who should serve on our self-study committee? Ours is a medium-sized agency that provides a variety of services.

A. A self-study committee usually consists of a steering or coordinating committee and a number of sub-committees—one sub-committee for each major aspect of your agency's or school's services and operations. The steering committee usually includes board members and key staff. The professional staff in the area of each sub-committee should be part of the work of that sub-committee. Specialists and experts of various kinds from outside the agency may be added to any committee on which their advice and insight may be useful. This may be especially helpful to a small agency.

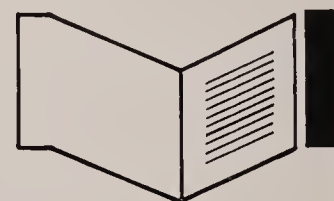
The Rhode Island Association for the Blind, one of the first three agencies to be accredited, successfully handled its self-study in this way: sub-committees studied nine areas—orientation and mobility service, social casework service, volunteer service, workshop program, public relations, garden project (not a "fragrance" garden), homebound indus-

tries, vision rehabilitation, and recreation.

The executive committee of the association studied administration, function and structure. The finance and public support committee studied financial accounting and fund-raising. Personnel practices were reviewed by the personnel committee, and the physical facilities study was done by the properties committee. (See "Accreditation—As It Relates to Agency Planning and Program" by Helen W. Worden, executive director of the Rhode Island Association, in *The New Outlook for the Blind*, 61:318-20, December 1967.)

What is your question about accreditation? Send it to the National Accreditation Council, Suite 1406, 79 Madison Avenue, New York, N.Y. 10016. If it is of general interest we will try to answer it in this column, but you will in any case receive a direct, prompt reply.

Current Literature



Raleigh Rehabilitates the Blind. *The Lion* (Lions International, 209 North Michigan Avenue, Chicago, Illinois 60601), Vol. 52, No. 8, March 1970, pp. 22-23. The story of the Raleigh Lions Clinic for the Blind, Inc., opened in 1967 by the Raleigh Lions Club. The clinic, which consists of an evaluation unit, workshop, and research division, operates in cooperation with the North Carolina State Commission for the Blind. It is geared to aiding the multiply handicapped blind from throughout the state.

A Teacher of Teachers, by William M. Kapp. *Performance* (President's Committee on Employment of the Handicapped, Washington, D. C. 20210), Vol. 20, No. 6, January 1970, pp. 18-20. Story of James K. Martin, totally blind since early childhood, who is a Federal Civil Service employee with the Air Training Command Instructor Training School, Randolph Air Force Base, Texas. Mr. Martin, who has a master's degree from Texas A&M, trains Air Force instructors in methods to be used in teaching fledgling aviators.

Workshops for the Handicapped; An Annotated Bibliography, No. 6, compiled by Dorothy C. Perkins, Martin G. Brodwin, and Andrea V. Oberstone. Los Angeles, California: California State College, Los Angeles (Order from: National Association of Sheltered Workshops and Homebound Programs, Inc., 1522 K Street, N. W., Washington, D. C. 20005), October 1969, iii + 53 p. \$1.00 for postage and handling. This sixth annual edition of the bibliography covers the literature for the period July 1968 through June 1969.

Physical Therapy for the Blind Child, by Myrna Turner and Irwin M. Siegel. *Physical Therapy* (American Physical Therapy Association, 1740 Broadway, New York, New York 10019), Vol. 49, No. 12, December 1969, pp. 1357-63. Presentation of physical therapy techniques currently in use and under investigation at the Illinois Visually Handicapped Institute in Chicago. A copy of the check-off form used for evaluation is included. The three basic areas covered are: (1) physical characteristics and ability; (2) gait; and (3) concepts of body image and orientation.

Eye Rubbing in Blind Children: Application of a Sensory Deprivation Model, by Richard J. Thurrell and David G. Rice. *Exceptional Children* (The Council for Exceptional Children, Jefferson Plaza Suite 900, 1499 Jefferson Davis Highway, Arlington, Virginia 22202), Vol. 36, No. 5, January 1970, pp. 325-30. Report on a survey of 150 students at the Wisconsin School for the Visually Handicapped, representing a range of visual impairment from partial sight to total blindness, as to quantitative incidence of eye-rubbing.

An Interrelated Approach to Teaching Visually Handicapped Children and Mobility Education, by William Goodman. *Exceptional Children* (see address above), Vol. 36, No. 6, February 1970, pp. 445-49. Discussion of the idea of training a new kind of professional person who could act as both teacher and mobility instructor.

Social Isolation, Activeness and Leisure Reading Among the Blind, by Stanley S. Guterman. *Social Science & Medicine* (Pergamon Press, Inc., Journals Department, Maxwell House, Fairview Park, Elmsford, New York 10523), Vol. 3, No. 3, January 1970, pp. 349-61. Study of why social isolation correlates negatively with interest in reading. Data comes from a survey of reading patterns among the blind in Essex County.

Problems of Play and Mastery in the Blind Child, by Doris M. Wills. *British Journal of Medical Psychology* (Cambridge University Press, 32 East 57th Street, New York, New York 10022), Vol. 41, No. 3, 1968, pp. 213-22. Detailed description of a four-year-old blind boy's play activity and its role in developing his ability to cope with his inner and outer world.

Multivariate Analysis of the WISC Scales for Blind and Sighted Children, by M. H. Tillman and W. L. Bashaw. *Psychological Reports* (Box 1441, Missoula, Montana 59801), Vol. 23, No. 2, October 1968, pp. 523-26. The authors question the validity of predictions derived for blind children when the verbal section of the Wechsler Intelligence Scale for Children is used without modification.

Reading Aid for the Blind, by J. S. Brugler and W. T. Young. *Electronics World* (Ziff-Davis Publishing Co., 1 Park Avenue, New York, New York 10016), Vol. 82, No. 5, November 1969, pp. 48-50, 91. A report on the development and progress of the tactile reading device at Stanford Research Institute. The device, first conceived by Dr. J. G. Linvill and designed by Dr. J. C. Bliss, is still in the early experimental stages.

Seeing With the Skin, by Benjamin W. White, Frank A. Saunders, Lawrence Scadden, Paul Bach-y-Rita, and Carter C. Collins. *Perception & Psychophysics* (Psychonomic Journals, Inc., 1200 West 34th Street, Austin, Texas 78705), Vol. 7, No. 1, January 1970, pp. 23-27. A report on the experiments being conducted at the Smith-Kettlewell Institute of Visual Sciences, Pacific Medical Center, San Francisco, California, under the direction of Dr. Paul Bach-y-Rita. Both sighted and blind subjects are being tested in the use of a sensory substitution system that converts a visual image into a tactile one.

Shall We Have 'Seeing Aids' for the Blind? by David R. Zimmerman. *Today's Health* (American Medical Association, 535 N. Dearborn Street, Chicago, Illinois 60610), Vol. 47, No. 12, December 1969, pp. 20-23, 79-81. Round-up of information concerning experimental attempts to develop artificial sight. The author talked to many of the scientists who attended the Visual Prosthesis Conference held in Chicago last summer. Mention is made of Dr. Paul Bach-y-Rita's tactile device (see previous citation), Dr. Armando del Campo (inventor of the "amauroscope") and the reading device of Dr. J. C. Bliss and Dr. J. G. Linvill. A major portion of the article is devoted to Dr. Giles M. Brindley (of London), who did not attend the Chicago conference, and his controversial stimulation of the visual cortex by means of an electrode array implanted within the skull.

Providing More Effective Rehabilitation Services to the Elderly Blind, by Charlane Strand. *The Rehabilitation Teacher* (National Braille Press, Inc., 88 St. Stephen Street, Boston, Massachusetts 02215), Vol. 2, No. 1, January 1970, pp. 3-8. Text of a speech delivered by Mrs. Strand, of the Minneapolis Society for the Blind, at the AAWB Convention in July of 1969.

Wilkes Study on Hereditary Blindness, by Herman Gruber. *Insight* (North Carolina State Commission for the Blind, 410 Boylan Avenue, P.O. Box 2658, Raleigh, North Carolina 27602), Vol. 3, No. 1, Winter 1970, pp. 11-13. Brief report on a study conducted in Wilkes County, North Carolina, to determine the factors involved in heredity and the eye disease known as retinitis pigmentosa.

—M.M.R.



■ Joseph H. Louchheim, deputy commissioner of the Division of New York City Affairs of the State Department of Social Services, resigned his post effective April 8, 1970. Mr. Louchheim has been a public welfare executive for more than 20 years.

■ Samuel S. Herman, a commissioned officer in the Public Health Service and a former associate director for extramural research in the National Institute of Environmental Health Services, has been appointed the first associate director of the new National Eye Institute, one of the National Institutes of Health. Dr. Herman will be responsible for the Institute's extramural research and training programs relating to the causes, prevention, diagnosis, and treatment of blinding eye diseases and visual disorders.

■ *The Visually Impaired Child: Growth, Learning, Development, Infancy to School Age*, by Carol Halliday, was released in March. This 88-page booklet describes the developmental sequences through which children pass, discusses special aids needed by visually handicapped children, and includes descriptive listings of educational materials, agencies, programs, and services, and a subject bibliography. It is available upon request from Instructional Materials Reference Center, American Printing House for the Blind, 1839 Frankfort Avenue, Louisville, Kentucky 40206.

■ Robert Martin of Davis, California, has been appointed state director of social welfare in California, replacing John C. Montgomery who resigned in late 1969.

■ The American Foundation for the Blind is considering the possibility of publishing its *Washington Report* in braille. Designed for persons working in the field of services for the blind, the

bimonthly report covers the activities of Congress and federal agencies of concern to the field. All those who would be interested in a braille edition should write to the Publications Division, American Foundation for the Blind, 15 West 16th Street, New York, N.Y. 10011.

■ The Working Blind, Philadelphia, has changed its name to Center for the Blind. The address, 36th and Lancaster Avenue, Philadelphia, Pennsylvania 19104, is unchanged.

■ The Associated Blind, Inc. (135 West 23rd Street, New York, N.Y. 10011) has announced a contest for the purpose of collecting true stories from blind people who have had unusual experiences with sighted people, experiences that illustrate lack of understanding, peculiar attitudes, or thoughtlessness. The Associate Blind will edit and use the stories as part of its public education campaign. First prize is ten dollars, second, five dollars, and five third prizes of two dollars each. Entries will not be acknowledged or returned. The deadline for entries is June 30, 1970. Winners will be notified by September 15, 1970.

■ George F. Meyer, executive director of the New Jersey State Commission for the Blind from 1937 to 1964, died on December 31, 1969. Blind since childhood, Mr. Meyer was a leader in many aspects of work for the blind. He served as president, American Association of Workers for the Blind; member of the board of directors, American Foundation for Overseas Blind; member of the board, John Milton Society; and vice-president, American Foundation for the Blind. On April 15, 1970, the George F. Meyer Textbooks and Materials Center was dedicated in his memory at the headquarters of the New Jersey State Commission for the Blind in Newark.

■ John F. Wilson, director of the Royal Commonwealth Society for the Blind, received the Helen Keller International Award of the American Foundation for Overseas Blind. The award was presented at a luncheon meeting of AFOB's board of directors on April 15, 1970.

■ *Caring for the Visually Impaired Older Person*, an illustrated handbook describing detailed techniques for visual screening, patient evaluation, personal management, basic mobility, and other helpful areas of instruction, is available from the Community Rehabilitation Services Department, Minneapolis Society for the Blind, Inc., 1936 Lyndale Avenue South, Minneapolis, Minnesota 55403. The book is priced at five dollars per copy.

■ William J. Sloboda of New York City has been appointed to the newly created position of associate director of administration of the American Foundation for the Blind. Most recently, Mr. Sloboda served as director of finance for the National Council on the Aging. Prior to that he was executive vice-president and treasurer of Central Media Bureau, Inc., an organization in the field of electronic data processing.

■ Charles C. Taylor, chairman of the New York State Commission for the Blind and Visually Handicapped, has announced that, as a result of a 1969 state law eliminating the sale of products labelled "blind-made" that were not actually made by blind persons, the Commission has received fewer complaints of abuses in the sale and distribution of blind-made products than in previous years. The law requires that every product sold as "blind-made" must carry a registration number issued by the State Commission for the Blind and Visually Handicapped.

■ The Dallas County Association for the Blind (Texas), the Rhode Island Division of Services for the Blind, Providence, the Hadley School for the Blind, Winnetka, Illinois, and the Tennessee School for the Blind, Donelson, have recently been granted accreditation by the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, New York City.

■ The nationwide "Stop Rubella" campaign, now active in 50 states and territories and in 20 communities across the nation, is being spearheaded by the National Communicable Disease Center, Health Services and Mental Health Administration, in Atlanta. More than three million children have been vaccinated and, according to Dr. David J. Sencer, director of the Center, "We are steadily progressing toward our goal of vaccinating 40 to 60 million children between the ages of one year and puberty against the disease." Over \$25 million has been awarded to the 70 state and local health departments by HSMHA, and additional funds supporting the effort are coming from state and local health departments and numerous voluntary and professional organizations.

■ J. M. Woolly, superintendent of the Arkansas School for the Blind, Little Rock, and vice-president of the American Foundation for the Blind, was presented the honorary degree of Doctor of Laws by Hendrix College, Conway, Arkansas, on March 30, 1970.

■ *Viewpoints on Evaluation*, a textbook on evaluating and training handicapped workers from a rehabilitation standpoint, has been published by Special Training Facility (P.O. Box 17, Talladega, Alabama 35160). Written by Hollis Hitten, chief evaluator of the Maryland Workshop for the Blind, Baltimore, this 100-page volume presents practical information concerning the role of an effective evaluator, qualifications and personal traits of evaluators, and the basic requirements for setting up an evaluation center. According

to the publisher it is the first book of its kind and is intended for experienced evaluators and beginners alike. It is priced at \$1.50 per copy.

■ The Edward R. Johnstone Training Center, Bordentown, New Jersey, has honored the Personal Products Company, a division of Johnson & Johnson, and the Junior Woman's Club of New Brunswick, New Jersey, for distinguished service in the rehabilitation of the handicapped. The Johnstone Training Center is a residential facility for retarded adolescents.

The awards were made in recognition of a series of programs on feminine hygiene developed in 1969 for exceptional children by Personal Products Company, a leading manufacturer of feminine hygiene products, and the woman's club. The award-winning programs for blind, brain-injured, and physically handicapped girls and women comprise a recording of "Growing Up and Liking It," a booklet published by Personal Products Company, braille editions of two student booklets, "Growing Up and Liking It" and "Strictly Feminine," and a Special Education Demonstration Kit for use by educators. In response to requests from visually handicapped persons, large print editions of the booklets have recently been published. Information about these programs is available from the Director of Consumer Education, Personal Products Company, Box 6, Milltown, New Jersey 08850.

Coming Events

June 27-July 2 Association for Education of the Visually Handicapped, New Orleans.

June 28-July 3 American Physical Therapy Association, Washington, D.C.

June 28-July 4 American Library Association, Annual Convention, Detroit.

June 29-July 17 Movement in Education: A Symposium Illuminating the Role of Movement in the Education of the Normal and of the Atypical Child, conducted by Bryant J. Cratty,

Ed.D., at La Verne College, La Verne, California.

July 21-22 Mid-American Conference of Rehabilitation Teachers, Little Rock.

July 22-24 American Association of Workers for the Blind, Southwest Regional Meeting, Little Rock.

August 2-6 National Medical Association, Annual Convention and Scientific Assembly, Atlanta.

August 12-14 Twenty-third Annual Conference on Aging, Institute of Gerontology, University of Michigan, Ann Arbor.

August 16-21 American Congress of Rehabilitation Medicine, 47th Annual Session, New York City.

August 17-21 International Congress on Education of the Deaf, Stockholm, Sweden.

August 30-September 2 Fifteenth International Congress of Schools of Social Work, Manila, Philippines.

September 6-12 Fifteenth International Conference on Social Welfare, International Council on Social Welfare, Manila, Philippines.

September 24-25 American Association of Workers for the Blind, Middle Atlantic Regional Meeting, New York City.

September 25-27 American Association of Workers for the Blind, Western Regional Meeting, Hollywood, California.

September 26-30 National Rehabilitation Association, Annual Conference, San Diego, California.

September 27-October 1 National Recreation and Parks Association, Philadelphia.

October 5-9 American Academy of Ophthalmology and Otolaryngology, Las Vegas.

October 12-16 Audio Engineering Society, New York City.

October 17-22 American Academy of Pediatrics, San Francisco.

November 7-13 American Occupational Therapy Association, New York City.

December 13-18 White House Conference on Children and Youth, Washington, D.C.

Sensi-Quik

The Touch Cane for Walking
Faster with Safety



Sensi-Quik's contour handle arranges the fingers for quick down-touching and accurate, rhythmic side motion with thumb and finger, minimizing wrist action. The nub at the handle's elbow rides in the crotch of thumb and forefinger, providing purchase for fingers when the hand perspires or when it rains. The tapered-off end reduces "tripping hazard" on crowded sidewalks.

Made of flexible fiberglass, tipped with diamond-hard tungsten carbide, the Sensi-Quik touch cane gives the traveler a sharp signal and alerts other pedestrians to his approach.

The cane's working tip, a carbide disk one-half inch in diameter, gives the user a special advantage in the subway. As he moves across the loading platform toward the train, the carbide tip glides easily over the rough concrete surface, giving off a "rippling" sound. Other riders, alerted by this sound to the traveler's approach, are more likely to help him get aboard.

The carbide tip, originally developed in 1956 for the bamboo model of the Sensi-Quik, is now available for the fiberglass model, which was introduced in 1965 and has been continuously improved ever since. The shaft of the fiberglass cane is tubular in construction, giving adequate strength within necessary restrictions in weight.

The fiberglass model comes with either crook or contour handle and either carbide or replacement steel tip. The bamboo model, still available to those who prefer it, comes with polished wood crook handle and carbide tip.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact

Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

Mr. Franklin S. Clark
The Go-Sees
166 East 92nd Street
New York, N.Y. 10028

THE NEW Outlook FOR THE BLIND

September 1970 Volume 64 Number 7

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The Blind in the Age of Technology:

A Public Discussion

Five leading scientists in the field of sensory research and perceptual alternatives met together last spring, with an audience of about 300 workers for the blind and members of the general public, both sighted and blind, to discuss the role of technology in solving the problems of blind persons. This public meeting, held April 29, 1970, at the Ambassador Hotel, Los Angeles, was sponsored by the Los Angeles Area Committee of the American Foundation for the Blind, New York City. Miss Flora Marks, head of the committee, chaired the meeting; M. Robert Barnett, executive director of the American Foundation for the Blind, was the moderator.

The meeting

□ The panel of scientists participating in the discussion included Robert W. Mann, Ph.D., Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts; Emerson Foulke, Ph.D., director, Perceptual Alternatives Laboratory, University of Louisville, Louisville, Kentucky; James C. Bliss, Ph.D., Bioinformation Systems, Group Engineering Techniques Laboratory, Stanford Research Institute, Menlo Park, California; Patrick W. Nye, Ph.D., Willis H. Booth Computing Center, California Institute of Technology, Pasadena, California; and Leslie L. Clark, director, International Research Information Service, American Foundation for the Blind, New York, New York.

The Panel of Scientists

The following presentation of the remarks of the panel and of their discussion with the audience was prepared by the editors of the *New Outlook for the Blind* from a transcript of the meeting. In an effort to facilitate the task of the reader in following the rather free and broad-ranging discussion, questions that were directed specifically to an individual panel member and that were concerned with information presented by him in his remarks have been placed immediately after those remarks. Comments by other panelists on the same subject have also been grouped there. Miscellaneous questions and remarks have been placed after the discussion between the audience and the last panelist.

□ *Remarks by Dr. Robert W. Mann:* I am going to take a very pragmatic, provincial, and pedagogical approach in my presentation and I am going to limit my remarks specifically to the things that we have been doing at MIT. In our program at MIT, we have been concerned with devices not only for mobility and communication, but for vocational and recreational purposes as well. Participating in this program over the past decade have been many of my students (some of whom have gone on to work in the field of blindness—one at present is a technical advisor to the Commission for the Blind in Massachusetts), some of my faculty colleagues at MIT, and many of my colleagues in the medical profession with whom I have collaborated.

Remarks by Dr. Mann

Our major concern over the past few years, and one which is now nearing completion, is computer automation for the translation of braille and the systems for the delivery of braille in environments that call for simultaneous availability of inkprint and braille. The computer program we are using is similar to the one that the American Printing House for the Blind, Louisville, has been using for a number of years for the production of braille books.

One of the complications of computer programming—for those who are innocent of its complexities and subtleties—is the great difficulty of transferring the computer program, that is, the directions for doing something, from one computer system to another. This problem exists not only between systems of different manufacturers, but between machines of the same manufacturer.

One of our current efforts, therefore, is the development of an English-to-Grade-2-braille translation program in a universally accepted computer language, in this case COBOL. This program, which is very close to fruition and which will be finished this summer, will be readily and easily transferable from any machine to any other machine. This means that environments that have access in any way to a computer of any of a wide range of sizes and kinds will be able to use this computer program to produce Grade 2 braille translations. Such access can usually be arranged, often at reduced rates or even for free, for use of a local insurance company computer or for equipment in a branch office of a computer manufacturer. The Atlanta public school system, which by late summer will be using our program to produce braille, has arranged for the use of the administrative computer already in use within the system.

Much of our attention has also been directed to devices which will produce braille for the individual. Such a device, now in the process of experimental deployment and which we call the MIT BRAILLEBOSS, is the size of a teletypewriter. It is designed to be interconnected with computers of various kinds either directly or through telephone lines. A BRAILLEBOSS has been in operation for the last few months in the Perkins School for the Blind, Watertown, Massachusetts. If a teacher wants a braille version of an examination, he simply operates the keyboard and receives a Grade 2 braille version almost instantly via a telephone line connection with the MIT computer nearly 10 miles away. Similarly, several blind computer programmers in the Boston area get their computer outputs not in inkprint, which someone would have to read to them, but in braille. Before the year is out, we expect to have BRAILLEBOSSes employed in a wide variety of typical situations: public schools, institutions for the blind, industrial and commercial settings for blind computer programmers, and a wide variety of others, including even broadcast stations so that blind radio announcers can get the wire service news in braille directly from the Teletype.

With the cooperation of colleagues not only at MIT, but at the Massachusetts Commission for the Blind and the Boston University Low Vision Clinic, we have under development a closed-circuit television system for use by the

Computer translation of braille

Translation program in COBOL

Teletypewriter braille

Television used as a reading aid

partially sighted. This system includes an inexpensive television camera (like those used in banks and hotels for surveillance) which is focused on the reading material. The enlarged images of the letters then appear on an ordinary television set or monitor. The control of the movement of the camera and of the magnification, intensity, and contrast of the image are under the complete control of the reader. We have been very, very pleased with the fact that a wide variety of people with very low or tunnel vision have been able to use this kind of device and have been able to read with far less fatigue than when using telescopic or other kinds of optical aids.

□ Our interest in mobility devices ranges from the development of a more durable and practical folding cane to more sophisticated electronic sensing devices. The PATH SOUNDER is used in conjunction with a cane and reaches ahead of the blind traveler several steps beyond the reach of the cane to provide information about possible obstacles. Essentially an echolocation device, it hangs from a strap worn around the neck and provides audible cues to warn of obstacles at certain discreet ranges from the traveler.

We have also been interested in the problems of deaf-blind persons, particularly the problem of adequate warning systems: fire alarms, paging systems, telephone bell, and doorbell enunciators that cannot ordinarily be sensed by individuals who can neither see nor hear such signals. The TAC-COM we have developed is a cigarette-package-size device that can be carried around in a person's pocket. It is essentially a radio receiver that, stimulated by a signal from a small transmitter at the point under "surveillance," produces vibrations and thereby provides an adequate tactile warning to the individual. By appropriate coding of various types and intensities of vibrations, it is possible for the deaf-blind person to identify the source of the warning signal, that is, he will be able to distinguish a fire alarm from a telephone call or a visitor ringing his doorbell. We are in the process of installing this kind of a system in the sheltered workshop and residential facilities of the National Center for the Deaf-Blind, Industrial Home for the Blind, Brooklyn, as well as in some private homes, in order to test its feasibility.

In addition to these devices, my colleagues and I at the Institute have undertaken studies for a variety of other devices that are also now being tested, including recreational equipment, such as a ball with a noise source that enables a blind child to locate it, and vocational devices, such as a steel tape measure which reads out in braille.

As I mentioned at the outset of my remarks, I have chosen to emphasize the pragmatic, the tangible things that are very close to realization, if not already available. I would, however, like to close my remarks by saying that this work is related to and derived from a much larger body of research in which my students and I have been engaged. This research, which is represented by a very substantial bibliography, is concerned not only with the problems of blindness, but is concerned generally with the problems of sensory and motor loss, with the whole question of human rehabilitation in the face of blindness, deafness, loss of cutaneous sensation, or loss of limbs.

Mobility Devices

Warning systems for the deaf blind

General areas of research

In fact, a substantial part of my work has been directed towards artificial limbs and I have been associated with a prosthetic device known as the "Boston arm." This limb uses information from the central nervous system to control the artificial appendage. In other words, research of this kind is involved with the very intimate connections between the residual, virtually intact human system and a machine, be it an artificial aid for the blind or an artificial limb. Clearly, there is a much brighter future ahead in which much more sophisticated devices will greatly facilitate the rehabilitation of those with sensory and physical disabilities of various kinds.

□ *On the subject of using computers that have the capability of feedback in braille, couldn't libraries that have computers somehow provide this service to blind individuals who would be willing to come into the library itself?*

Computers and Braille

Dr. Mann: Certainly. For example, there is a blind graduate student in economics at MIT who gets all of his material in exactly that way, by using the MIT computer with an attached braille embosser.

What kind of equipment do you envision being needed for the computer-assisted production of braille, assuming that there is donated computer time?

Dr. Mann: The answer to that depends largely on the rate at which braille would need to be produced. The computer could be used in a batch process system or in an interactive system. In the batch system the input is a long stream of controlling commands. The computer then does its work uninterruptedly and the output is a continuous stream of braille. In an interactive system, a person types in a question to the computer and the computer answers in braille. Then he types in another and the computer replies in braille. The batch process system, which would be the obvious choice if the rapid production of braille materials is the aim, could use a commercial chain printer. These units, for which there are adaptation kits from IBM to turn them into braille printers, turn out about a thousand lines a minute. This would be quite good for turning out a single copy of something; mass production would be impractical because even though it is very fast it would tie up the computer for some time.

In the interactive mode you might just as well have a computer-driven embosser of the kind we are at present working on. This is much slower, about 120 braille cells per minute, but that is about as fast as anybody can read it. This kind of embosser could be used in a batch processing system where the demands on the system were modest and where the system could be used exclusively for braille production. For example, we have worked with the agencies for the blind in Denmark and have figured out that with one of our braille embossers working around the clock, they could produce all of the braille needed by the Danes. In this country, therefore, we expect that a volunteer group could very well use our braille embossers to produce braille at modest rates. For producers needing a higher volume of braille, however, the converted chain printer would probably be needed. One last note, neither of these systems has been adapted to produce interpoint.

I am sure that we are all very interested in experimental devices, but when, for example, will the collapsible cane that you mentioned be available to individuals?

Dr. Mann: That particular cane is available now from HYCOR, a manufacturer in Woburn, Massachusetts. I would, however, like to use this question to elaborate further on the whole problem of getting even a simple device to the point where it is commercially available. I will use this cane as a case in point. The final design for this cane was the result of extensive study, experiments, and testing over the period from about 1963 to 1968. At this point, Mr. Vito Proscia, the director of the Sensory Aids Center at MIT, took up the challenge of getting it into production. He went to the Northwest Foundation in Seattle and was able to convince them of the value of the cane we had designed. They awarded a grant to MIT, which MIT in turn used to provide a manufacturer with the nonrecoverable tooling and capital investment costs to produce the cane at a reasonable profit. The cane is made of a special grade of aluminum tubing which can be directly formed into conical members. This technique, called swaging, is a very new technique that requires a very special machine, a swaging machine. It was the grant from the Northwest Foundation that made it possible for us to buy the swaging machine for the manufacturer. This then is the tortuous path one has to go through these days to have a device manufactured in quantity.

Paradoxically enough, it is this business of mass production that Americans are best at. Of course, since the American free enterprise system operates on the basis of the highest return on an investment, manufacturers don't pick devices for the blind, or artificial limbs. It is by no means clear that such devices can make a profit. Who knows, perhaps they can. We simply have to figure out some way of achieving the transition from a laboratory prototype of a useful and reliable device to a level of production to meet the demand. The ultimate answer to the problem probably lies in the fact that production will require some sort of subsidy arrangement. Even so, we are faced with the problem of how such subsidy arrangements for private or public support are to be brought about.

You also mentioned an electronic sensing device when you were discussing mobility aids. Do you envision the traveler, when using both a cane and such a device, becoming more dependent on the device than on the cane?

Dr. Mann: I would see him sharing his dependence. We are all dependent on the sensory information that we receive through various channels. A person deprived of sight has to use other channels to supply the information normally received via the visual channel. The fundamental, theoretical problem is how to distribute information to these other channels. The cane is a superb instrument and we have an enormous scientific regard for the kind of information which a well-trained blind person receives from it. It is, unfortunately, only about an arm's length long. The intent behind the device I mentioned, and behind the several others that are under development, is to supplement or to



Using mobility devices

augment the cane. None of the serious investigators of scientific aids for mobility are proposing a substitute for the cane.

☐ *Could one of you elaborate somewhat on the so-called laser cane?*

The Laser Cane

Dr. Nye: The laser cane is essentially the familiar long cane into which is built three gallium arsenide lasers and three photocells. The lasers are small crystal devices which project a beam of reddish light within a very narrow frequency band in the visible spectrum. The principle of the system is simply what is called optical triangulation. The angles between the transmitter, the object reflecting the light, and the receiver indicates the distance of the object. When the angles between the transmitter and the receiver are correctly adjusted, only objects at a certain distance will be sensed. There are three beams of light scanning the area in front of the traveler, one for the area in the region of the head, one aimed at detecting objects at waist level, and one on the ground for detecting curbs, steps, and similar obstacles. The signals from the device are in two forms, one a tactile signal to the fingertip of the user for obstacles detected by the two lower beams, the other a warning sound for obstacles at head height.

Please elaborate on the television camera and receiver used as a low vision aid.

Television reading aid

Dr. Mann: First, this is not a portable system. It consists of a television camera, a book stand, and whatever size of receiver that is most useful. With respect to distortion, there is very little regardless of the degree of magnification from inkprint to video that is desired. The greatest advantage of this system over optical aids is the question of glare. In all optical aids, the illumination required for reading the characters is directed at the paper, but it is also reflected back up into the eyes of the reader. In the television set-up, the page can be illuminated as much as required, because the reader does not look at it; he reads from the monitor. The degree of brightness and contrast on the monitor can be adjusted independently of the illumination on the page. In many cases, this means that the period of time which can be spent reading without discomfort is greatly increased. In addition, many individuals find that using the television set-up is not as physically tiring as using optical aids. The fact that the television camera does the scanning while the reader just sits back and reads from the monitor, obviously requires less effort than using optical aids and being forced to scan the page manually.

Are these devices available now?

Dr. Mann: No, they are not generally available. We are building 10 of them now for clients of the Massachusetts Commission for the Blind. The device was, however, specifically prescribed for each of these individuals. There are parallel investigations of this same system going on all over the country. For example, Dr. Samuel Genensky of the Rand Corporation in Santa Monica, California, is working in this area. I don't know if any other group is building these devices for the general public or not.

Mr. Clark: There have now been proposed a number of closed-circuit television systems for aiding the reading of the visually impaired. In view of the marketing problems and the difficulties in maintaining the equipment in service, it has been suggested that a conference be held of those now involved in the design of such systems to help achieve a concensus among producers of the equipment. It is hoped that the National Academy of Engineering will soon sponsor such a meeting.

What is the cost of these devices?

Cost of devices

Dr. Mann: We're aiming for about \$1,000, although I must emphasize at this point that all of us represented here make every effort in designing and building such devices to keep costs down. We try, for example, to use only commercially available video cameras and monitors and to make the scan and control systems as simple as possible. One problem with sensory devices that must never be minimized is that they must be maintainable wherever they are being used. In the television reading set-up, which we call VIDEO VISION, the use of commercial elements enables standard television maintenance people to service the equipment.

☐ *Remarks by Dr. Emerson Foulke:* The individual obtains information from his environment by means of his various perceptual systems. When one of these systems does not function properly, as in the case of visual impairment, the individual must obtain the same or equivalent information by means of some alternative perceptual system. What we are interested in investigating at the Perceptual Alternatives Laboratory, therefore, are these alternative ways of obtaining information from the environment. Although we are not limited in the laboratory to investigating perceptual alternatives that are appropriate for blind individuals, these do constitute most of our research effort.

Remarks by Dr. Foulke

One area in which we are only in the process of formulating a research program is mobility, the skill of getting about independently. In order to perform a skill of this sort, the individual must obtain information about his environment, information for making the decisions necessary for safe and successful travel. Our interest is first of all in investigating the perceptual basis of mobility, in finding out what kind of information an individual needs in order to determine the states of the environment that are of concern to him when he travels as a pedestrian. Further, we want to know from what functioning sensory channels or perceptual systems he can obtain this information. If our experiments in this area produce useful data, it should be possible to indicate, for example, the kind of information that mobility devices ought to make available to their users. Such data would, of course, be useful in the design of such devices and, also, in indicating how procedures used in mobility training might be made more effective.

Mobility

Another area, one in which we have done more work, is perceptual alternatives for reading. One such alternative is to obtain the same kind of information that is ordinarily obtained by reading visually through the sense of touch, that is, by some touch reading system. Specifically, we are interested in learn-

Reading alternatives

ing more about the relationship between man's perceptual capacity and the kind of dot patterns that occur in the braille code. There does not seem to be any reason for believing that man's perceptual capacity is exhausted by the 63 patterns that comprise the six-dot braille code. For this reason we have begun to explore his capacity for perceiving more complex patterns of the same general type, but formed of larger matrices or cells. We are at the present time, for example, exploring the perceptual characteristics of dot patterns that are formed by adding one or more columns to the two columns (of three dots each) of the existing braille cell. With each addition of such a column, the number of available dot patterns is increased eightfold. If it can be shown that such patterns are easily identifiable and easily learned, there then arises the very interesting challenge of deciding what meanings to assign to the new patterns that would be available. This is a little bit far out and we are not ready to make any proposals regarding augmented braille codes at this time.

Another kind of perceptual alternative to visual reading which we have been investigating is reading done via listening, particularly through recorded materials. Talking books are, of course, used very heavily by a great many blind individuals. The rate at which such reading is done is determined not by the individual's own reading requirements, but by the rate at which his oral reader happens to speak. This rate is usually much slower than the rate at which most individuals could conveniently listen. One goal, therefore, is to increase this rate so that it more closely or adequately matches the rate at which individuals can listen. Such an increase, because it reduces the time necessary to listen to a given reading selection, is often called "time compression."

□ Time compression can be accomplished in a variety of ways, some of which are relatively cheap, some relatively expensive. It unfortunately turns out in this case, as in many others, that the cheaper the method is, the poorer its general quality. For example, probably the cheapest method is simply speeding up a tape or record, that is, playing it at a speed faster than the one at which it was recorded. The distortion in vocal pitch and in voice quality introduced by this method, however, does not result in a very high quality listening experience. Word intelligibility is also very quickly degraded. Therefore, although it has some limited application, it is not really a satisfactory solution to the problem.

Another means of compression currently available is the harmonic compressor developed at the American Foundation for the Blind using circuitry made available to it by Bell Laboratories. This device makes it possible to double the word rate of recorded speech while preserving vocal pitch and quality. Unfortunately, at present, the device can only double the word rate, that is, it has little flexibility. Yet another means of compression, one that is widely used at present, is the sampling method. In this method, only samples of the recording are reproduced in the final version and other very brief samples are periodically discarded. This method works on the principle that when the samples deleted are short enough, the listener cannot detect their absence when the samples that are retained are played in succession. There is enough redun-

Compressed Speech

The harmonic compressor

Compression by sampling

dancy in speech signals to allow for this periodic deletion of small speech segments. The quality of the final recording is somewhat poorer than that realized with the harmonic compressor, but it does have the advantage of having the capacity to vary the rate of compression or, in other words, the word rate of the final output.

We have been doing research with compressed speech for quite a number of years. Although I won't attempt to review the research at this time, I will say that it has generally indicated that in a wide variety of applications, listeners ought to be able to cope successfully with speech presented in the neighborhood of 275 words per minute. This means that through the use of compressed speech, blind individuals will be able to read via recordings at rates comparable to the silent reading rates of high school and college students. We have also established the Center for Rate-Controlled Recordings, as a part of the Perceptual Alternatives Laboratory, University of Louisville, in an attempt to fill the requests of people interested in time-compressed recorded speech for use in research or for educational demonstrations. So far, we have been able to meet this demand. Unfortunately, we have not as yet obtained the kind of funding that would permit us to make such material available to individual readers.

One last area of research that I will just touch on before closing is investigating the process of visual reading to discover what operations the visual reader can perform that are not available to the person who reads by listening. The goal is to design a piece of equipment—an aural reading instrument—that will allow the individual who reads by listening to take advantage of these operations. I cannot, of course, go into this area in any detail in a presentation like this, but I can give an example of the kind of thing we are working on. The visual reader is able to search the printed page for desired information and retrieve it very easily. At present, the individual reading by listening to a tape or disc recording on existing equipment cannot easily do such scanning. There are ways, however, in which search and retrieval could be facilitated through the use of various types of auditory displays. Such a system, if it could be easily managed by a person who reads by listening, would provide one of the operations that are quite taken for granted by visual readers.

Center for Rate-Controlled Recordings

☐ *Since the speech compression devices you have mentioned are so expensive, is there any practical and inexpensive way of speeding up the talking book machines issued by the Library of Congress?*

Speeding Up Recordings

Dr. Foulke: Yes, if you don't mind the pitch distortion. One device for doing this is the variable frequency power supply manufactured by the American Foundation for the Blind. This can be connected to the motor of either a talking book machine or a tape recorder. Or, if you want to be a little more sophisticated, the American Printing House for the Blind has a small variable frequency power supply that is built into either a Sony 105 tape recorder or any of the talking book machines sold by them. In this case there is just a control on the deck that can be manipulated to change the speed of the record or tape.

In augmenting the braille cell, do you mean that additional dots would be added or that new kinds of compound cells would be formed?

The "three by n cell"

Dr. Foulke: No, this is different from compound cells. The standard braille cell has three rows and two columns of dot locations, that is, six locations. What we are working on is what is called the "three by n cell," that is, three rows by any desired number of columns. This means that when you require patterns that cannot be formed in the current braille cell, an extra column of three dots would be added, giving you nine dot locations. Each time a new column is added there are eight times the number of characters that can be formed. Therefore, with two columns, the standard braille cell, there are 63 possible characters; with three columns, there would be 511 possible characters or 448 new characters. This, of course, would not be a replacement for the braille code and would be compatible with it.

Since present braille writers can only produce the six-dot cell, wouldn't such innovations as nine- or 12-dot braille require special equipment? And how, in the latter case, could one operate a braille writer with 12 keys?

Dr. Foulke: Existing equipment could be modified to produce nine-dot braille, but it is true that if you wanted to produce patterns in a cell with 12 locations, it would probably be necessary to form part of the pattern with one key operation and to complete it with another. I should note at this time that at present we are not even investigating the patterns that could be formed in a 12-location matrix. The kind of schemes that we are considering, however, could be expanded to include 12 locations should the need for additional code characters arise.

☐ *Remarks by Dr. James C. Bliss:* I am an electrical engineer and over 10 years ago I began working on what I thought was a basic research project to study the capability of the sense of touch. During this time, however, I have become more and more interested in practical problems, until today, my major concern is really trying to get some of the things that we have learned in the research programs out into use. Although that is really consuming most of my time, I am still involved in a few research projects.

Remarks by Dr. Bliss

When I first went to Stanford, I met Professor John Linvill, who has a blind daughter. The two of us have, since then, collaborated on the development of a device to help a blind person to read virtually any printed document. We have progressed through several experimental models of such a device and today I think we have one, called the Optacon, that represents a significant step toward the achievement of our goal.

The Optacon is about the size of a dictionary, weighs eight pounds, and operates on batteries. The probe, which is about the size of a lipstick case, performs much like a television camera, except that instead of handling images of 250,000 points it handles images of only 144 points. The probe has a little window through which it can "see" an area about the size of one letter. The image received through the probe is then magnified and displayed on an array,

The Optacon

or mosaic, of 144 tactile pins. The activation of this pins produces a vibratory image of the letter from the page on about half the area of the finger. The probe is moved across the line of print, left to right, each letter being recognized through the moving vibratory image on the tactile display.

We have built eight of these devices so far and for the past six months we have been experimenting to find out how well people can learn to read with them. At present there are five individuals who are quite good readers, but the best is John Linvill's daughter, Candy, who is now a freshman at Stanford. She can read at 60 to 70 words per minute and uses the device quite extensively for reading her mail, the notes and announcements that are passed out in her classes, and her German lessons. Although use of the Optacon has not eliminated her need to read braille, listen to recorded material, and use sighted readers, its area of usefulness does give her independent access to much material that formerly had often been a problem. Because of this, the device has become quite indispensable to her.

Two other Stanford students are also using the Optacon and are able to read between 30 and 40 words per minute. A computer programmer at the Stanford Research Institute, where I work, uses the device for many of the same purposes as others are using it, but in addition the device has been found to be useful in his work for reading computer listings and punched cards.

One of the most exciting of our experiments at present is our work with six young children at a nearby elementary school. Ranging in level from the second to the seventh grades, these children have received individual instruction from us for about 15 to 30 minutes every day for the last month. Although this is our first experiment of this kind, it seems to be going rather well. One girl is able to read text material with the Optacon and is at the point where more access to the machine for practice would help boost her rather slow reading rate. An eighth grader outside this group is reading at about 30 words per minute. Some of the younger children in the group learned to recognize all the letters and are beginning to put them together to form words.

□ Before I go on to some of our plans for the future, I would like to speak briefly about the stages in the development of devices. In engineering and in research and development, devices first take shape in what is sometimes called a "breadboard" stage. At this point, the device is only something that almost works, but not quite. And even though you can't pick it up because if you do it will fall apart, the model does give you enough information to indicate whether or not you are on the right track and can go further. This is followed by the "prototype" stage in which the device will hold together. Often a number of copies are made of a prototype for experimental purposes. If the device looks good at this point, a large number of models are made for the "pilot run" stage. These can be field tested, that is, operated and used away from the laboratory and the people who invented and developed the device. This is an expensive stage because up to a hundred copies of the device are necessary for adequate testing. If the device performs well in the field, then it can be manufactured and made available more generally.

The Optacon is in the prototype stage, that is, we have made and tested

Optacon is being tested

Experiments with children

The Stages of Development

*Prototypes of the Optacon
have been built*

the device and it looks very good at this point. My concern now, therefore, is in organizing and developing a pilot run so that the device can be tested more extensively in the field, in schools, rehabilitation centers, and other settings. My time, as I noted at the outset, has largely been devoted to trying to talk to anyone who might possibly help in getting the Optacon to this next stage.

There are, of course, other projects that are in the very early stage of development, the stage at which the Optacon was about six to 10 years ago. Two projects which are very promising are really extensions of the Optacon. We are, in other words, trying to answer questions like: Where do we go after the Optacon? What does the Optacon lead to? Is it a finished device in itself or not? It is my feeling that such research is part of the evolutionary process of a device and that we should not only continue to improve and refine such a device, but to extend its capability.

For example, we are studying the feasibility of connecting the Optacon to a computer via telephone lines. It may be possible to have the signals from the Optacon camera sent to a very sophisticated computer that is capable of recognizing the print and speaking words to the reader via the same telephone lines. We have simulated such a system in the laboratory and are now studying such design questions as what kind of character recognition error rates are needed and how well can an individual track a line of print.

Another possibility we are exploring is using something like an Optacon to look at the environment instead of the printed page. In effect, we would be applying the principles of the reading device to an orientation device. I must say, however, that with 144 points, or even a few hundred, the picture one would get of something would be only very crude. Clearly, there is a great deal of research to be done before there will actually be a practical orientation device based on these principles.

☐ *How difficult is it for a blind person to learn the forms of the letters of the alphabet as produced by the Optacon?*

Dr. Bliss: I am sure there are a lot of individual differences in this matter. We have been fortunate in our work to have had average or above-average students to work with. When an individual does not know the shapes of the letters of the alphabet to start with, this can easily be taught through the use of an embossed or raised line alphabet with the Optacon. Because the patterns produced by the Optacon are so similar to the shapes of the printed letters, this problem has been only a very minor part of any of our training programs.

Once the basic use of the Optacon is learned, how long does it take to become proficient with it?

Dr. Bliss: There are several factors involved in proficiency that have little to do with the device itself, for example, an individual's facility with the language, how well he can spell, and his motivation to read. We have observed, at one end of the scale, that some individuals can read at 10 words per minute after

Extending the uses of the Optacon

Learning To Use the Optacon

Developing proficiency

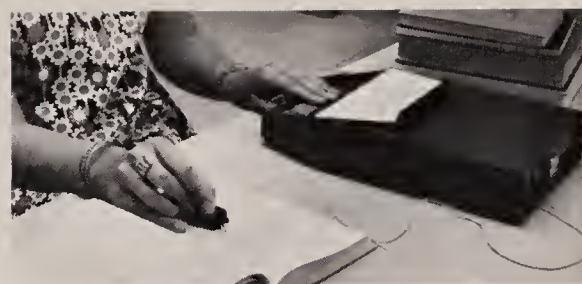
one month's practice and up to 30 words per minute after two months. This is very fast and I think it is an exceptional person who can accomplish this. At the other end of the scale, there were individuals who, it was clear, would take a great deal of time to learn to do anything even closely resembling reading. Because of the nature of our research project, we have not had the time to train these individuals and have had to give up on them.

Is it possible for an elementary school district to be included in the pilot program for the Optacon?

Dr. Bliss: If we had a pilot program, I am sure it would be possible. So far, we have only been doing research. We are now at the point where we are trying to bridge the gap between the research phase and the production and testing of a larger number of devices in a pilot program. At the moment, however, our plans are very fluid, which means that we have no formal plans, only hopes.

□ *Remarks by Dr. Patrick W. Nye:* My interest in this subject began about 10 years ago when I was carrying out some work in Britain at the National Physical Laboratory, work sponsored by St. Dunstan's, the blind ex-servicemen's organization in Britain. We were concerned with trying to find some solution to one of the basic dilemmas in providing reading and mobility aids for the blind. On the one hand, the best possible device is usually prohibitively expensive. For example, the system for reading that employs a computer which would produce artificial speech, as just described by Dr. Bliss, would cost somewhere in the neighborhood of a million dollars. On the other hand, we can conceive of devices which are less than ideal, but no one can predict whether, at the level of sensory perception, there is any chance that they would function successfully. For example, a reading device which generates a sound display might require that the reader learn what amounts to a new language of sounds. Can individuals learn such a system? And if they can, how well? Consider a mobility device which scans the environment and generates some kind of sound pattern. Such a device requires that the user extract from all the sounds generated by the device the particular signals which would indicate obstacles in his path. Again the question that must be answered is whether the user can acquire the necessary skill.

Human beings can do some very clever things which machines cannot be made to do and this has led to the tendency, when working with less than totally ideal devices, to overestimate the degree of human sophistication and adaptability. Man's perceptual skills are, after all, limited largely to those required for survival and have evolved over a considerable period of time. One of the subtle things that a human being does, for example, is to extract or select information from a whole array of conflicting input signals. This is sometimes called the "cocktail party" problem, because one example of this ability is being able to select the voice of one particular speaker in an environment where many others are talking at once, to concentrate on what he alone is saying, and



Remarks by Dr. Nye

Human perceptual abilities

to reject everything else. An important question now is whether it is correct to conclude that dealing with the output of a machine is precisely analogous to the "cocktail party" problem. However, there are important differences in the way in which speech sounds are identified and an individual may very well not be able to select information from an arbitrary display as he would from an array of competing human speakers.

Our efforts were aimed at finding some solution that would be intermediate between the costly best solution and the inexpensive one that might prove to be too difficult to learn to use. One of the areas we investigated concerned the underlying reasons why some sounds are more difficult to learn than others and some new findings emerged. In any event, we never reached the point of actually building a device.

I am now associated with the California Institute of Technology and my work is centered largely on a study of mechanisms of vision. In addition I am active in a committee of the National Academy of Engineering that is concerned with sensory aids for the blind and the deaf. Dr. Mann is the chairman of the committee. More specifically, our interest has been in organizing the very fragmented sensory aids research efforts in this country and to that end I am organizing a research conference on the problem of mobility for the blind. By this means we hope to find the answers to two basic questions: How do we evaluate a mobility device? And, is it possible to say in advance what kind of criteria a particular device should meet?

The first question would seem to be a rather easy one to answer. Set up an experimental situation with a set of obstacles and see if someone using the device can negotiate a course without bumping into anything. Such an approach, however, does not really determine if the device is of any practical use on a crowded, noisy street. But, to carry out tests in real-life situations is not without a great many hazards.

The second question is really a set of further questions. What kind of output, generated by the device, can a person easily anticipate and easily understand? What signals attract attention, that is, are more attention-getting than other signals? Can we, by process of simulation, generate or discover what are the best designs for an aid before the task of actually building it is begun? If such questions can be answered, what then is the best strategy for using such information to guide the design of better devices? I am hopeful that the conference participants will begin to provide answers to some of these crucial questions.

Mobility devices

Evaluating mobility devices

☐ *Remarks by Leslie L. Clark:* I should like to consider two questions which I think are important to the context of the discussion which has taken place so far. One is simply, why technology? The other, what spectacular achievements can be expected in the next decade?

It seems quite natural in a culture such as ours, a culture in which we have reaped so many benefits from the applications of technology, to apply that

Remarks by Mr. Clark

technology to the problems of impairment. In fact, this has been a trend for some time in the field of work for the blind. It is said that it was the interest of the empress of the Austro-Hungarian Empire in providing some means of writing for her blind niece that led to the invention of the typewriter. The long-playing record was developed to aid in providing reading materials for the blind. Current advances in technology would seem to indicate that providing new links with the environment for the blind are possible.

It must be remembered that the population of blind people is far from uniform and that there are many subpopulations with special needs and requirements. It makes very good sense, therefore, to talk about an armamentarium of sensory aids so that many options are open to any particular individual for satisfying his needs and for getting at the environment in ways that are meaningful to him.

□ For the future, the possibility of artificial vision is the one spectacular idea that occurs to most people. Indeed, the question at the back of the minds of many blind people is: If technology is able to deliver some means for me to get direct access to my environment by providing me with a visual prosthesis, why then isn't all the money available for research devoted to such work and the work on other aids and programs of rehabilitation stopped? Clearly this attitude is a result of people having heard only of some of the successes in such research, but not of the many discouraging things that have been learned.

Artificial Vision

This view has been reinforced, for example, by the results of some rather extraordinary experiments conducted in the United Kingdom by Brindley, Lewin, Donaldson, and their associates. They inserted a prosthetic device within the skull of a blind nurse, placing it on the occipital cortex. The subject was able to perceive points of light, called phosphenes, about the size of a grain of rice held at arm's length, reliably, consistently, and stably in response to electrical stimulation. Such stimulation could be used to represent the features of objects in actuality in the form of duplicate, although simplified, patterns of these phosphenes.

Experiments in the United Kingdom

I think it is important to realize that this is an experiment. It is a particularly bold and daring and courageous experiment because we know practically nothing about the nature of the electrical signal which stimulates phosphenes, about the long-term effects that such stimulation will have on the occipital cortex or the rest of the brain, or about the kind of information that the brain needs in order to make this a viable prosthesis. All that we do know from this experiment is that patterns can be stably and reliably generated and perceived. Even the most optimistic observer would not expect, even at the end of the decade, anything more than an extremely rough approximation to a visual experience, one whose nature and content cannot as yet be specified very well.

Another discouraging fact is that it has been estimated that even with the most optimum development of such a technique, fewer than 10 percent of those who are totally blind could be aided by it. Thus if one accepts the figure of 400,000 administratively defined blind persons in the United States, of whom 40,000 are estimated to be totally blind, perhaps 4,000 might be aided in an as yet unspecified way by a visual prosthesis.

There is, nevertheless, a real possibility for a spectacular achievement in the next decade in another somewhat different direction. If it would be possible for the developments that have just been described by the other speakers to be delivered in the quantities necessary to everyone who could use them, that would indeed be a spectacular achievement. The delivery of the technology for allowing persons to have direct access to the printed page when they need it and to navigate and orient themselves in both familiar and unfamiliar environments is the great challenge.

Delivery of technology is the greatest challenge

Is it true, as I have heard it said, that it is entirely conceivable that within our lifetime there will be an apparatus comparable to the human eye that will permit the blind to have a form of vision somewhat the same as sighted people?

Mr. Clark: Assertions have been made that, with an investment in time, talent, and money equivalent to the space program, a visual prosthesis could be produced. And we are all prone to believe that such a development is possible because we have all been conditioned to expect this kind of spectacular result from technology. These assertions, however, remain just that—assertions, no matter how prestigious the source. Even admitting the possibility, closer examination of the nature of such a device reveals that no one is really talking about providing a visual experience that is in any way comparable to the vision of sighted people. The devices so far are much more likely to provide an experience somewhat like watching a highly degraded, black-and-white television image in which there is some uncertainty whether or not an image or picture even exists on the screen. This is a very optimistic prediction and I am not sure that the result could even be called vision. It would probably depend on one's definition. Whether this kind of device is likely to occur in the decade we have entered, or in 25 years, or in 50 years, or at all, is difficult to say.

Would you please comment on the Russian experiments with artificial vision using dogs?

Experiments in Russia

Mr. Clark: I have visited the Academy of Sciences in Moscow on three occasions and talked with the people involved in such experimentation. There is no reason to believe that they are any further along than the British or the Americans. In fact, they are probably not quite as far along as the British.

Experiments with artificial vision using animals is a very indeterminate sort of thing, because an animal cannot report to you on the success of the experiment. There has been a great deal of discussion, therefore, about the efficacy of using human beings in such experiments. This, however, brings up the ethical question of using human subjects at this stage of the research.

□ Dr. Mann: I think an important point here is that when a normal person uses vision he transforms the physical space (what is happening in front of him) into a perception in his brain of what is happening in front of him. It is not at all clear, however, if, when one generates phosphenes by electrical stimu-

**Comment by Dr. Mann
on Artificial Vision**

lation of the brain, the perceptions one has are anything like the perceptual space that a sighted person "sees." The very sophisticated and very precise experiments of Drs. Brindley and Lewin are beautifully executed physiological experiments, but they do not begin to answer this question. We still have no idea of what that relationship is and, as Mr. Clark pointed out, it is unlikely that we will discover it by using animals.

General Discussion and Miscellaneous Questions

Mr. Barnett: I think this might be a good time to point out that a great deal of the research that has been described so far has been supported by federal money, that is, tax dollars. Federal grants to the states, to universities, and to other research centers, plus funds from private sources, have been extremely helpful in these efforts to advance our knowledge about sensory perception and the potential of devices that are of use to blind persons.

Support for research

Dr. Nye: Dr. Bliss and I recently calculated that a total of about \$900,000 per year is spent on research of the kind that we have been discussing here. This represents only about .2 percent of the \$500 million spent on social welfare for the blind and visually impaired.

In his remarks, Mr. Clark said that there were 400,000 blind persons. Aren't there really more than that?

Number of blind people

Mr. Clark: Yes, there probably are. I was taking a conservative figure for the number of totally blind persons in the United States. A rather more liberal one, one which may perhaps be closer to the truth, is 900,000. In both instances, the figures are only estimates.

Mr. Barnett: The world total is estimated to be between 15 and 25 million persons who meet the blindness definition, that is, individuals who are severely visually handicapped, but not necessarily totally blind.

Has there been any progress in presenting the charts and graphs found in books to talking book users and braille readers?

Tangible charts and graphs

Mr. Barnett: As far as talking books are concerned, I don't think this problem has been solved. A recent meeting in Chicago to establish standards for the preparation of reading materials for the blind, called by the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, only discussed very basic questions, for example, tape speed and things of that sort. Don Staley, executive director of Recording for the Blind, New York, was the chairman of the committee on standards for recording. I am sure that the question of graphs and charts will be high on their list of priorities now that the really basic things have been established.

Dr. Foulke: In some instances, Recording for the Blind and other similar organizations and groups decide that some form of tangible representation of particularly important graphs and charts should be provided along with a

recording. Some fairly standard procedures have been worked out for this. The group in Chicago, however, came to the conclusion that not enough is really known about the way in which tangible displays should be constructed for it to suggest standards. The Educational Research Department of the American Printing House for the Blind has done some research on how to choose symbols for diagrams that are easily discriminable and can be mixed. Dr. William Schiff, formerly with Recording for the Blind and now at New York University, has also done work in this area. The problem, however, remains that the translation of a visual display into a tangible form, into raised lines, for example, more often than not turns out to be a meaningless jumble of lines. There are several reasons for this. For instance, there are large differences in resolution for the two perceptual systems, sight and touch; also there has not been enough investigation to solve the problem of representing three-dimensional space on a tangible, two-dimensional surface. In addition, it must be noted that blind children, as they are presently being taught, receive very little systematic experience or training in learning to interpret information presented in the form of two-dimensional, tangible displays.

Very little is known about constructing tangible displays

☐ *Have there been any advances in reducing the bulk of braille books?*

The Braille Belt

Dr. Mann: One conceptual approach to reducing the bulk and the fragility of braille-embossed books is to store the information in coded form on magnetic tape. A machine then reads the tape and presents a continuous tactual display on what is known as a braille belt. A braille belt is a moving display of braille that is somewhat analogous to a moving electrical sign like the one that announces the news in Times Square in New York City. An extraordinary amount of such coded information could be stored on a very, very compact reel of tape. One could, for example, store several braille books on one tape cassette of the type used in portable cassette machines. Two groups that I know of are investigating this idea. Several of my students have made attempts at practical, economical, manufacturable devices; the more refined models are still under consideration. Arnold Grunwald at the Atomic Energy Commission Laboratory, Argonne, Illinois, is also working on a magnetic tape-to-braille belt system. The major drawback to this idea, of course, is that it does require this rather complex machine to read the tape and restore the information to a tactile form.

I have heard of a project to investigate the use of the enlarging capabilities of a microfiche reader as a low vision aid. What have been the results of that study?

Dr. Foulke: That research was being headed by Dr. Carson Nolan of the American Printing House for the Blind, Louisville. I do not recall the exact details of the project, but it seems that their experience was positive. I do not know what current plans they have for future implementation of the idea.

The Use of Encounter Microlabs With a Group of Visually Handicapped Rehabilitation Clients

The present paper is an attempt to define, illustrate and clinically assess the use of a relatively new grouping of psychotherapeutic techniques with a select group of clients. Very few articles dealing with the use of group psychotherapeutic techniques as used with visually impaired clients have appeared in the literature.¹ The present article is therefore in large part an attempt to rectify the dearth of information presently available.

Table 1 describes the clients on which the material of the present article is based, and from it, the following is indicated: 1) there were five males and three females which provided for a fairly even distribution of the sexes; 2) The average age per client was 22 years; 3) Three of the clients were totally blind and five were partially sighted. This fortuitious grouping provided for maximal interaction of the differing visual impairment groups; 4) Five of the clients were in college, one was in vocational school, and two were in high school. The educational level of this particular group was, therefore, fairly high. This group of clients met at the Missouri Bureau for the Blind, St. Louis, for a total of 10 two-hour sessions. The average number of clients at each session was five, with a range extending from a minimum of three clients to a maximum of eight. The group was led by a clinical psychologist and two co-therapists.

Client	Sex	Age	Degree of Vision	Present Educational Status
1	M	18	TB	Special School District
2	M	20	TB	Public High School
3	M	23	PS	Junior College
4	M	22	TB	Junior College
5	M	28	PS	Junior College
6	F	20	PS	Secretarial School
7	F	21	PS	College
8	F	20	PS	College

TB = Totally Blind PS = Partially Sighted

□ The word "encounter" itself is a relatively new concept in the field of psychology and is as yet only broadly and vaguely defined. For a more extensive discussion of the development and usage of encounter techniques, the reader is referred to an excellent article by Murphy³ and a book by Schutz.⁴

For the purposes of this presentation, encounter is defined by the following set of statements: 1) Encounter is action. Verbal as well as non-verbal techniques are utilized; 2) Encounter deals with the whole person. Cognition, sensory awareness, and resultant interactions are dealt with; 3) Encounter

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TABLE 1
Description of Rehabilitation Clients by Sex, Age, Degree of Visual Impairment, and Present Educational Status

What Is Encounter?

is a blending of technique and philosophy; 4) Encounter encourages awareness. Self-awareness and other-awareness are repeatedly emphasized; 5) Encounter is invested with growth and self-realization.

Although encounter is, therefore, a multi-faceted concept, the foregoing definition has been derived from this author's own personal experience and other therapists may envision it somewhat differently. Furthermore, many of the elements in encounter are not new and have been utilized for many, many years in various aspects of psychological endeavor, for example, Gestalt therapy, client-centered therapy, existential psychology, psychodrama, sensitivity and training groups (T-Group), etc.

□ After working with visually handicapped school-aged clients for a number of years, this author has reached the conclusion that "talking" therapies, when used in isolation, are quite ineffectual in producing behavioral change. Because these individuals cannot, after all, directly experience or come into actual contact with the reality of many concepts that they use appropriately, it became apparent that such concepts are really quite meaningless to them. In addition, such individuals not only receive much so-called "second-hand" experience from sighted interpreters, but they are very often from overly protective environments that further deprive them of direct experience.

Since encounter is "action" therapy, the visually handicapped individual is encouraged to come into direct contact with the meanings of the concepts that he often uses. He is encouraged to feel real feelings, to feel others' real feelings (empathy), to become aware of his body and to become aware of others' bodies. In essence, the visually handicapped client is asked to focus on the sensory modalities available to him and, thereby, to really experience the meanings of many of his "second-hand" concepts first-hand.

□ The procedure used by this author is called a microlab because of the shortness of the sessions and the element of experimentation involved. The prefix "micro-" refers to the two-hour session; encounter weekends and longer time periods are usually called workshops. The suffix "-lab" refers to the laboratory nature of the experience wherein new behaviors are experimented with. Incorporation or rejection of these new behaviors is often based on the feedback evidence gathered in the session.

The following discussion centers on the encounter techniques themselves which are based in large part on the work of Williams.⁶ They are grouped under five separate headings primarily for explanatory purposes; in reality they are not mutually exclusive. Within each grouping, where possible hierarchies of involvement or threat (minimal to maximal) are to be inferred.

□ A. *Techniques Used for Reduction of Initial Anxiety.* This particular group of techniques has as its primary objective the reduction of anxiety brought about by the novelty of the procedure and environment. The opening exercises often include: 1. *Deep Breathing.* In this exercise the client is told to lie down on the floor and to make himself as comfortable as possible. Pillows and blankets are helpful here. The client is then instructed to exhale as completely as possible and then to slowly inhale through the mouth, drawing air in evenly and without sudden jerks. The client is asked to pay

Why Encounter for the Visually Handicapped?

The Encounter Microlab

Reducing Initial Anxiety

particular attention to the feelings of bodily calmness and relaxation which ensue. 2. *Progressive Relaxation*. In this exercise the client is instructed to make himself as comfortable as possible and then told to alternately tense and relax various muscle groups starting with the feet and ending with the facial muscles. Attention in this procedure is focused on the difference in feeling between the act of tenseness and the act of relaxation. 3. *Corpse Posture*. Here the client is told to lie on the floor and to let go. Arms are stretched above the head with legs and feet also stretched out. Clients are told to allow their heads to roll to one side and their hands to flop to one side or where they will, and to imagine that their bodies have no bones. Suggestions that their bodies are sinking into the floor or that they are floating on a cloud have also been helpful.

Progressive relaxation

□ B. *Initiation of Interaction*. The techniques used for having people meet each other, for the initial coming together, follow a hierarchy of minimal interaction to maximal interaction and often include the following:

Initial Interaction

1. *Milling Exercises*. Here the clients are asked to randomly mill around the room following a specified sequence. They are asked to mill non-verbally and without touching and finally verbally and touching. The clients are then asked to share their experiences regarding differences between touching versus not touching as well as the differences between verbal versus non-verbal interaction. 2. *The Go-Around*. In this encounter exercise each client is instructed to go around to every client, touch him, and make an "I feel" statement followed by either "I like it" or "I don't like it." This is a potent technique which brings individuals into direct, and often intimate, contact with each other. This is an especially relevant technique for the visually handicapped individual who must come to know much of his world through the sense of touch. Many of the clients were initially quite frightened and hesitant with regard to touching another human being, but most ultimately found this to be a very rewarding experience. 3. *First Impressions*. This exercise is usually placed at the end of the second. Each client is asked to give his first impressions of every other client including any modifications which may have been made over the session. This was a totally new experience for all of the clients as they had never before been in a situation in which they had been responded to with such directness and honesty.

The go-around

□ C. *Techniques Used for Trust Building*. Before individuals can begin to share meaningful problems, frustrations, and conflicts, they must be able to trust those individuals with whom they are to share them. These encounter techniques, therefore, have as their primary goal the initiation of real trust. Some of the exercises in this category are: 1. *Fall and Catch*. Each client is asked to fold his arms, lock his knees, and to fall backwards into the arms of another person. Partially sighted clients and the therapists did most of the catching in this exercise while clients with detached retinas were excluded. Only one client was unable to trust anyone to catch him. 2. *Lifting*. In this exercise each client is asked to lie on the floor, to fold his arms on his stomach, and then to be lifted up from the ground by the other clients who are equally distributed on both sides of his body. Many clients noted the

Building Trust

pleasantness of this experience and stated that a single mass appeared to be holding them in the air rather than a number of separate and distinct individuals. 3. *The "Blind" Walk*. In this technique clients are paired off with one individual designated as the "sighted" guide and the other as the "blind" person. Clients are assigned to these roles irrespective of the degree of vision which they actually have. The instructions tell the "sighted" guides to help their "blind" partners explore the environment as completely as possible including as great a variety of sensory experiences as possible. After 15 minutes, roles are reversed and another 15 minutes are spent in the exercises. This encounter procedure proved to be one of the most effective ones used. It was quite surprising to see a totally blind client with especially poor mobility become an excellent "sighted" guide. He later noted that never before had he been given the responsibility for another person's welfare; it was a real reversal of roles as far as he was concerned.

"Blind" walk

□ D. *Techniques Used for Problem Elicitation and Working Through*. These encounter techniques are really the culmination of all that goes on before; i.e., the techniques discussed this far have hopefully brought the clients to a level at which meaningful problems can be shared with the group and at which an environment to foster problem solution has been established. Illustrations of these procedures are: 1. *Leveling and Feedback*. This encounter procedure is broken down into a short lecturette and an exercise. The lecturette was found to be necessary with this particular group for which psychological jargon had little associative value. The lecturette ran as follows, "Leveling with a group is saying what you really think when you feel it should be expressed. Leveling is really a form of feedback in which people feel free to express their true thoughts without fear of punishment, ridicule, or rejection. In leveling, the aims are to help the other person by being honest and open with your impressions of him—that is, how he comes across to you. Leveling is a two-way process, for you should learn to level with others and at the same time become the type of person with whom others can level as well." In the demonstrative exercise, the clients are divided into pairs in which each client tries to give feedback that is as open and as honest as is tolerable for him. The entire exercise is then discussed in a group setting. 2. *Lecturette on Honesty, Openness, and Directness*. The values and inherent difficulties in each of these three inter-personal constructs is elaborated upon and given meaning in all exercises in which the clients participate. 3. *Lecturette on the Here and Now*. The importance of dealing with problems, feelings, people, etc., in the *here and now* as contrasted to the *there and then* is emphasized throughout all of these exercises. Many clients avoid dealing with problems by sticking to other places and other times.

Problem Elicitation and Working Through

Lecturette

4. *Secret Pool*. Instructions given to the group are as follows, "This is a very serious exercise which deals with empathy. One at a time, I would like you to go over to the desk where Jan (a co-therapist) is sitting and tell her a secret which she will write down on a three-by-five card. This secret should be something that is very hard to share and it must be described in no more than two sentences. No person's name will be written on the card and each

Secret pool

member will be given someone else's card with which to deal." After the co-therapist has written down the secrets, the cards are then passed out to the clients making sure that no client receives his own card. The instructions then continue, "If any of you can read the secret on the card then he should do it. If you cannot read the card, then Jan will come over and read it for you. After you read the card (or have it read), try to say how that person who has the secret must feel. Try to get inside of his skin and be as open, honest, and direct as possible. Each member of the group may now add his own feelings as regards this particular secret." Each participant then takes his turn in reading a secret. This is an extremely potent technique for problem presentation and feedback as the client may share an extremely meaningful problem and still remain anonymous. The client may add further dimension to his own secret by being anonymously empathetic when it is read.

5. *Magic Shop*. In this procedure the clients are told that the therapist is going to pretend that he is the shopkeeper of a Magic Shop which has anything in it that anyone could possibly desire. Each client is then requested to interact with the therapist in terms of buying *anything* that he wants. This is an extremely useful projective device which allows the individual to share his most coveted desires and at the same time allows for an approximation of how much the client is willing to give for this wish. The shopkeeper may request any number of things for payment such as money, time, work, honesty, openness, etc. It was quite interesting to note *none* of the clients requested vision. One of the clients, during discussion, noted with surprise that other wishes and desires had now become more important to him than the return of his vision.

6. *Sharing of Positive and Negative Feelings with Regard to the Self*. Clients are encouraged to share with the entire group elements of the self which they regard as positive as well as elements which they regard as negative. Feedback is then given to each client regarding his positive and negative qualities. This type of sharing provides catharsis and allows each client to evaluate the effect that this particular quality has on others.

7. *Statement of Goals*. At the end of the first meeting clients are requested to bring a list of goals to the next meeting. This statement of goals gives the therapist some feeling for the direction of the group and allows the client to have a constant evaluation of himself with regard to the achievement of his stated goals.

Magic shop

Sharing feelings

□ E. *Guided Fantasy Techniques*. These techniques are really adjunctive to those just discussed, for they deal with conflicts, conflict resolution, goals, etc. Some of the fantasy techniques which have been utilized are: 1. *Body Image Improvement*. In this encounter procedure clients are asked to stretch out and relax utilizing some of the relaxation procedures already mentioned. Clients are then given these instructions, "In fantasy, I would like you to enter your body in any way that you want. I'd like you to explore all of your internal body parts and to make special note of those parts which you liked best as well as those parts which you liked least. When you have done this (approximately five minutes), I'd like you to come out of your body and explore the outside of your body as completely as possible. I'd like you to again

Guided Fantasy

make special note of those parts liked the most and those parts liked the least. (Five minutes is allowed for this.) Now I would like you to return to those parts which you liked the least, internal as well as external, and correct them." This guided fantasy technique is again especially relevant for the visually impaired individual who has many conflicts regarding his body image.

2. *Significant Others*. The therapist instructs the group as follows, "Fantasy four or five significant figures in your life—that is, persons who have had the greatest influence on you as a person. Fantasy them in a room; notice everything in the room. Notice what the people are wearing and how they look. They are talking about you; listen carefully to what is being said and how it makes you feel. Now you enter the room. You talk to each of the people and they respond to you. What do you say? What does each of them say to you? How are you feeling about them? What do you think they are feeling about you?" These fantasies are then shared with the group. The vividness, frankness, and spontaneity of many of the fantasies shared in this therapist's particular group were indeed astounding. Many of the clients registered astonishment at many of their own fantasy productions.

3. *Future Projection*. In this fantasy technique clients are asked to imagine what they will be doing in 10, in 20, and in 30 years. This technique is especially useful in elucidating goal orientation.

□ Before the first meeting of the encounter group discussed in this paper, some effort was made to objectively assess the clients who were to enter the group; i.e., pre-test as well as post-test measures were planned. A rating scale instrument² was selected for this purpose and was used by the counselors to rate each of their clients in the areas of social competence, social interest, personal neatness, irritability, manifest psychosis, and retardation. Each of these six categories was defined by a selected set of statements. This rating scale proved to be non-discriminating in that many of the clients were rated high in the positive qualities and low in the negative qualities. This effect may have been due to a large number of factors, including social desirability factors, the chance that this was an above average group of visually impaired clients, or the high probability that the rating scale which was selected was inappropriate for this type of rehabilitation client. The discussion which follows is, therefore, based on clinical impression and is admittedly quite subjective.

One of the primary areas of growth which appeared during the group sessions was an increase in self-assertiveness and independence. Individuals who had long sat silent began to make their needs known not only to the rest of the group but also to the therapist and cotherapist. Various clients reported that they had been able to tell their parents and teachers many things that had been bothering them for a long time, things that they had not been able to say for fear of reprisal. The type of assertiveness exhibited appears to have been of the constructive variety, as these clients reported that their efforts had been positively reinforced.

Concomitant with the above changes was an increase in self-awareness and other-awareness (empathy). Some clients reported that they had allowed

Significant others

Clinical Impressions

Areas of growth

Increased self-awareness

themselves to feel certain feelings which they had never allowed themselves to feel before because of the tremendous guilt which had thereby ensued. Individuals began to verbalize the feelings which they had for themselves, for other group members, and for significant others. This verbalization was carried on in a direct and straightforward manner which at times led to hurt feelings but these were in turn handled within the context of the group. Certain of the clients developed an amazing capacity for empathy and were really able to feel with another person.

Through these group sessions most of the clients developed their ability to give and to receive feedback in a direct, open, and honest fashion. This was an extremely difficult endeavor for all involved. Individuals began to tell other group members how they really "came off" to them, how these other group members really made them feel. No area was sacred. Feedback themes included dress, speech, sexual attractiveness, directness, etc. One client soon learned that his use of vulgar language was really only an attention-getting device and that it was extremely self-defeating. Another client was given feedback regarding his empty verbiage. Females in the group were given realistic feedback regarding their femininity while some of the males were made aware of their effeminate behaviors.

□ One of the most outstanding examples of change involved a partially sighted, female client who was an attractive albino. When she first entered the group, she was extremely fearful and close to tears. During one of the early sessions the group was asked to reveal some body "hang-up" in order to receive feedback about this physical problem from other group members. This individual was totally unable to admit her albinism and dropped out of the group. Through the efforts of one particular male client, she was brought back to the group meetings. As she became more trusting, she began to relate many of her frustrations and, at a later session, announced that she had become engaged. She noted that previously she had never entertained the possibility of marriage because of her albinism, a fact which she had never been able to admit openly. She explained that, because of her group experience, she had been able to tell her suitor of her albinism. His response was, "Is that all that's wrong? I thought it was something really serious."

□ One feeling which almost all of the participants, but especially the partially sighted participants, seemed to share was of belonging to the group. The partially sighted clients had formerly felt that they were not really a part of the "sighted" world and not really a part of the "blind" world. These particular clients reacted quite favorably to being an integral part of a group that cared for and accepted them without regard to their visual acuity.

Being a member or a leader of an encounter group is definitely not something to be lightly undertaken. The factors to be considered before entering an encounter group have been amply described by Shostrom.⁵ Some of the warnings to be observed by the therapist are: 1) be experienced; encounter techniques are powerful and can lead to serious, undesirable consequences unless properly handled; 2) exclude psychotics and borderline psychotics; 3) as a group therapist, always be available for resolving any conflicts left

An Example of Change

Conclusions

Qualities of a group leader

unresolved in the group; 4) as a group therapist, do not be afraid to tighten the reins on a group when a client is being unmercifully crucified; and, most of all, 5) be open, honest, and direct; you are, after all, the group model.

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Blind Texas College Students Aided by New Program

Close cooperation between the Texas State Commission for the Blind and the University of Texas, Austin, has resulted in a new and varied program of services for 60 blind and visually handicapped undergraduates at the University. "In the fall of 1967," says Miss Betty Bird, director of the program and a rehabilitation counselor for the State Commission, "we began the program with the idea of consolidating the services of the State Commission for the Blind into one office that would be accessible to the University's blind and partially sighted students."

Since then, in addition to providing funds (for tuition, required fees, and reader services) and personal and vocational counseling, the program has arranged for five reading rooms in the school library, shelf space for reference books in braille, and the checking out of tape recorders. Future plans for expanding the program include the acquisition of a tape duplicator and variable speed tape recorders, orientation of new students, and group meetings to discuss common problems and group activities.

Helen Keller International Award

Presented to John F. Wilson

□ On April 15, 1970, the Helen Keller World Crusade, American Foundation for Overseas Blind, New York City, presented its Helen Keller International Award for Outstanding Service to the Blind to John F. Wilson, C.B.E., director of the Royal Commonwealth Society for the Blind, London. The ceremony was held at a luncheon meeting of the Crusade's board of directors. Participating in the ceremonies were Jansen Noyes, Jr., president of the board; actress Katharine Cornell, chairman of the National Committee of the Helen Keller Crusade; Eric Boulter, associate director of the Crusade; and representatives of government, the United Nations, and voluntary, professional, and international organizations concerned with blindness and its prevention. The award, a sculpture by Doris Caesar entitled "The Spirit of Helen Keller," has only been presented to two other individuals, Col. E. A. Baker (1960) and Georges L. Raverat (1968).

Mr. Wilson, who was largely responsible for the founding of the Royal Commonwealth Society for the Blind, has been its head for 20 years. Through his leadership, the Society has promoted the education and rehabilitation of the blind and engaged in mass programs of eye examinations, treatment of eye diseases, and sight-restoring operations in remote areas of British Commonwealth nations throughout the world. In accepting the award, Mr. Wilson said:

□ The phrases which I had formulated, as one does before an occasion such as this, seem quite inadequate to thank you for your great kindness, generosity, and friendship. I will cherish this award for many, many reasons. First, because it commemorates Helen Keller. As an individual, she was unforgettable; as a legend, as a symbol, as a fable she has now become immortal. The award, like Helen herself, is not an individual thing, had it been, I would have felt totally inadequate to receive it. It is a tribute to the heritage, the tradition, and the common cause that all of our organizations have behind them. I also cherish this award because it is an American award, one given by people whose friendship I value and whose standards I greatly admire. Our two organizations have worked together for over 20 years within the family of the World Council for the Welfare of the Blind, with the United Nations, and with national and international bodies throughout the world. Our common objectives, which there was no need to sit down and agree on because they were so clearly important, included expanding the opportunity for education of the blind and adapting the techniques of rehabilitation to the realities of all cultures and societies.

We are engaged now in what is perhaps the most formidable task of all, the prevention and cure of blindness on an international scale. Nobody knows

The Award and the Ceremony

Mr. Wilson

Acceptance Speech

Prevention of blindness

how much blindness there is in the world today, but it is at least 15 million people. And the situation is getting worse. It is estimated that unless something really big is done about it in the next few years, there will be 25 million blind people by the end of this century. In other words, in the last hour and a half, 120 more people have gone blind. And there are people behind these statistics, not just clean, manageable, easy ciphers on a chart, but people—like the infant I met a few weeks ago in Nigeria, the bullet which blinded him still bulging from his forehead, or like the frail old lady that I met in Karachi, Pakistan, whose 35 years of blindness had meant destitution and misery for her and her family, but blindness that could have been cured in a matter of minutes at a cost of about five dollars.

We have always known that most of the world's blindness was preventable, but the fact that a thing is preventable or even that we wish to prevent it is not in itself decisive. It is a matter of intent, of resolve, of national initiative and the mobilization of international forces. It is a matter of the utmost importance that this action should be taken now. At the moment, the cost of maintenance (whether in a poor village or a large Western nation), adds up to something like the budget of a major power. The amount being spent on research for the prevention of blindness is less than the cost of a quite unsophisticated fighter-bomber.

□ Today there are millions of people in the world going blind from trachoma and glaucoma. There are whole communities darkened by river blindness. A few weeks ago in Ghana, I went to one of those river-blindness villages in which a tenth of the people are blind. Farmers plant their grain along a straight bit of bamboo. A hemp rope is strung from the village out to the well to help the blind women to get water. There is nutritional blindness, probably the greatest single cause of blindness among infants in the developing world today. Nutritional blindness would seem to be a matter of economic development, but it is really a public relations problem. A recent survey in India, conducted by an eminent nutritionist, concluded that if all the women in southern India could be induced to feed their children a cupful of green vegetables every day, thousands upon thousands of these children would not go blind; and yet, they are going blind. The number of children blinded from this cause in India alone may increase from the present 400,000 to 700,000 in the next decade.

Blindness is preventable, but the astounding, the impelling, the stunning thing that we have found in the last few years is that so much of it is actually curable. In India and Pakistan, there are at least 1,200,000 village people who are blind from cataracts, needlessly blind from a condition which a simple operation taking a few minutes and costing a few dollars could cure. Millions are going blind from lack of treatment and the civilized world must somehow organize and develop its efforts to provide that treatment.

The American effort in this work has been considerable: your great organizations and individuals, your leadership in the World Council for the Welfare of the Blind and the International Association for the Prevention of Blindness, and your aid missions, the S.S. HOPE and the Peace Corps. There are the



The Extent of Blindness

Curable blindness

great international organizations on which we all rely: the World Health Organization which has recently committed itself to a much more comprehensive involvement in work for the prevention and cure of blindness, and UNICEF with its world concern for children.

The most significant and impressive move made in recent years, however, has been the entry into this field of the American Foundation for Overseas Blind with its successful and enthusiastic professional traditions and with the resources of a great country behind it. Our two organizations are collaborating in this effort and I am sure that it will be as fruitful a partnership as it has been in other fields. Indeed, it has already begun in Kenya where teams sponsored by AFOB and the Royal Commonwealth Society are working with the local organizations. Last year, some 32,000 people were treated and there were 2,400 operations.

With the proper backing I believe that five years from now our two organizations together could be sponsoring programs which would be able to restore sight to 50,000 people a year. Last year, for example, in our program alone, there were 14,500 operations for the restoration of sight and we hope that in the next year it will exceed 20,000. In the last five weeks, a team of doctors has been working in a village in southern India. In a single day, they did 405 sight-restoring operations. On that day, the world was just about keeping pace with its blindness rate.

□ I know that Helen Keller would have welcomed and applauded this decisive entry of AFOB into the field of prevention of blindness. Helen believed in science. To her it was a liberating force, not a menacing, terrifying one. She also believed in the 20th century and, in this, I think she was characteristically part of the instinct of America. To her the 20th century was the possibility of progress and she believed that the welfare of the whole of the human race was a reasonable objective for the 20th century. And what a century it is. A single bomb can do more damage than Napoleon with all his armies, but a medical team with antibiotics can do more healing than the whole medical profession could do a century ago. Vulgarities and cynicism can indeed flourish, but it is also an age in which a darkened, battered life, like Helen Keller's can shine more radiantly than Helen of Troy. In fact, the spirit of Helen Keller could perhaps be expressed as follows: There is a light on the way ahead. It could be the glare of a nuclear Armageddon or the glow of some revolting big brother utopia, but it could so much more easily be the gleam of the beacon light of a braver world.

AFOB's entry into the field of prevention

Goal of 50,000 a year

The 20th Century

Cosmetology Workshops Held in Five Cities

Cosmetology workshops to teach blind women to apply their own cosmetics and to help teachers of the blind in giving such instruction were held at the American Foundation for the Blind, New York City (November 18-19, 1969); Dallas Services for Blind Children (February 23-24, 1970); Arkansas Enterprises for the Blind, Little Rock (February 26-27); Rehabilitation Center, Florida State Bureau of Blind Services, Daytona Beach (April 13-14); and Illinois Visually Handicapped Institute, Chicago (April 16-17).

The techniques and procedures taught in the workshops were developed by the American Foundation for the Blind, in cooperation with technicians of Helena Rubinstein, Inc. The idea for consulting the cosmetics man-



The first cosmetology workshop, held in New York City, was opened by Mala Rubinstein, director of Helena Rubinstein, Inc., and M. Robert Barnett (right), executive director of the American Foundation for the Blind. J. Albert Asenjo (left) is an AFB specialist in rehabilitation and the coordinator of the personal management project.



ufacturer grew out of AFB's planning for the recently published *Step-by-Step Guide to Personal Management for Blind Persons*, a book that analyzes some of the everyday tasks that are often difficult for a blind person.

Before the workshops were held, all of the techniques were tried by blind women in field tests held at the Rhode Island Association for the Blind, Providence; Mount Carmel Guild, Department for the Visually Handicapped, Newark, New Jersey; and the Jewish Guild for the Blind, New York City.

Mavis Shickell, Helena Rubinstein's chief technician, leads the Dallas workshop group in the exploration of their facial "geography," an important step in learning the use of cosmetics.



Miss Shickell divided the groups into pairs. By each taking turns, everyone had the opportunity to be both model and instructor and to receive individual attention.

Working with a blind model, Miss Shickell first demonstrates one of the hand movements used in cleansing and make-up application and then allows her to practice the technique unaided. The sighted members of the group imitated the instructor and demonstrated the techniques for the blind women.



Two participants in the New York workshop practice and demonstrate for each other the cleansing and make-up techniques.

Prematurity and Retrolental Fibroplasia

I would like to recall a remarkable episode in modern medical history—an unprecedented epidemic of blindness, which occurred exclusively in premature infants born over a 10- to 12-year period; suddenly and dramatically the outbreaks subsided. Now after a 15-year period when all seemed to be well, we are fearful of another outbreak. Regretfully, the subject of oxygen-induced retrolental fibroplasia (RLF) in premature infants is not a dead issue. We face some very important unsolved problems.

□ It seems quite clear now, as we look back, that the epidemic of blindness among premature infants was related to some observations which were made regarding the effects of administered oxygen on the irregular breathing patterns of very premature babies. It was found that if the concentration of oxygen in the inspired air was increased, all such infants breathed rhythmically. In the most immature infants it was necessary to raise the concentration of oxygen to 80 or 90 percent in order to convert the pattern of periodic ("stop-and-go") respirations to a regular rhythm.

This observation, I believe, was responsible for the widespread use of high oxygen concentrations (over 30-40 percent) in incubators for premature infants, in the belief that the irregular respirations indicated oxygen lack. Since premature infants had a high incidence of brain damage, attributed to insufficient oxygen, it was thought that the routine use of oxygen would improve the outcome of these babies. The amazing epidemic of blindness followed.

It was eventually shown in elegant studies, notably by Ashton, Ward, and Serpell¹ in England, Patz, et al.⁸ in the United States, and Gyllensten and Hellstrom³ in Scandinavia, that hyperoxia (oxygen in excess of the metabolic requirements) was the sole and sufficient cause of retrolental fibroplasia.

□ After preliminary studies were corroborated by a very extensive clinical study,⁵ there followed a period of about 12 years, which might be called a "restrictive period." During this time, oxygen was given very sparingly to premature infants. It was strongly advised that supplemental oxygen not be administered unless infants exhibited a clear need as demonstrated by blueness or respiratory difficulty, and that administration of extra oxygen be discontinued as soon as the symptoms improved. It had been shown in both animal and clinical studies that the risk of developing the eye disorder was related not only to the concentration of oxygen which the infants received but also to the duration of hyperoxia.

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Background

Restrictive Period

This article is a revised version of Dr. Silverman's "Prematurity and Retrolental Fibroplasia," *Sight-Saving Review* 39 (Spring 1969): 42-46.

During the 10- to 12-year restrictive period, the incidence of RLF in this country and abroad fell to a gratifying low level (3 per 1,000 surviving premature infants)⁷ The disease became so rare that most physicians lost interest and research into the basic mechanism by which excess oxygen damages the immature retinal vessels came to a halt. Interestingly, here is a disease which was controlled so successfully that interest in understanding the exact causative mechanism ebbed away. During this restrictive period we found ourselves with very effective means of preventing blindness in premature babies but with gnawing unanswered questions.

Also, during this period, other disturbing observations were made. Among these was the fact that deaths caused by another disorder of premature infants, hyaline membrane disease, increased as the incidence of retrolental fibroplasia decreased.² The increase in hyaline membrane deaths was not large and there was some argument about whether it was real or the spurious result of chance.

Another piece of unsettling evidence indicated that during the time when oxygen policy was changing from liberal to restricted use, there was a reciprocal relationship between incidence of retrolental fibroplasia and of cerebral palsy in survivors. In nurseries which had a marked reduction in retrolental fibroplasia, the incidence of cerebral palsy was high and vice versa. This association was very disturbing.

Toward the end of this 10- to 12-year period, there was intensive investigation of hyaline membrane disease in human infants and in experimental animals; it was shown that supplemental oxygen had the effect of relaxing the tone of the pulmonary blood vessels and improving blood flow to the lungs. This new information placed the pediatrician responsible for the care of the very sick, premature infant with hyaline disease in a difficult dilemma. As he adjusted the concentration of oxygen breathed by the babies he faced a risk of RLF on the one hand, and death from hyaline membrane disease or hypoxic damage to the brain on the other.

□ We have now entered a period which I would like to call the "determinative period"—one in which the pediatricians responsible for the care of sick, premature infants are attempting to administer oxygen safely by determining the state of oxygenation in the infant's arterial blood.

Unfortunately these determinations require frequent blood letting, and this is not entirely without risk because it is necessary to place plastic catheters through the umbilical blood vessels into the aorta and leave them in place for a relatively long period of time. Another difficulty is that the results obtained in the aorta may not be representative of the state of oxygenation in the baby's eye. It may be low in the abdominal aorta while the amount of oxygen in the blood going to the eye is too high.

Since oxygen is now being administered much more liberally to premature infants in an attempt to affect the course of the hyaline membrane disease, those who remember the epidemic of oxygen-induced blindness are exceedingly uneasy.

The question immediately arises concerning the safety of the "determina-

RLF research de-emphasized

Increase in cerebral palsy as RLF cases were reduced

Hyaline membrane disease treated with oxygen

Determinative Period

tive" policy of administering oxygen. How many errors of judgment are being made? Is the incidence of retrolental fibroplasia increasing?

There is no national data pool from which the current incidence of retrolental fibroplasia can be determined. Blind or visually impaired children in the community are usually not reported to a service agency until they appear for schooling. Thus there is an agonizing lag of five years or more before any rise in incidence can be detected unless the increase is explosive.

☐ In this uneasy atmosphere of doubt and concern the National Society for the Prevention of Blindness (NSPB) agreed to conduct a survey to find out if an early warning system could be developed to detect a rise in the incidence of RLF. They sought to collect data as a basis for an estimate of the incidence of retrolental fibroplasia in recognition of the fact that the policy of oxygen administration has changed sharply.

The year 1967 was chosen as a representative year for the new "determinative" policy and some 1,100 North American hospitals which had 1,000 births or more per year were surveyed for the numbers of infants with RLF born in that year.⁴ Obviously there are many problems with a mail survey (correctness of diagnosis, exact description of the population of infants at risk, etc.) and even if these did not exist, the first survey could not give a clear answer to the question as to whether there has been a rise in retrolental fibroplasia since there is no previous year with which to compare results. Nevertheless some interesting information did emerge and questions were raised which may be answered in future surveys. It should be noted that the study had the immediate and important effect of bringing the present-day problem to the conscious attention of a large number of pediatricians and ophthalmologists.

Few data were available on incidence of RLF

NSPB Survey

Hospital Size ^b	Hospitals		Hospitals	Number of RLF Cases Reported
	Surveyed	Responding	Reporting RLF Cases	
fewer than 1000	56	29	0	0
1000-2999	937	321	16	22
3000-4999	103	34	3	3
5000 and over	21	13	4	5
None ^c	0	2	1	3
Total	1117	399	24	33

TABLE 1
Summary of Reporting by Hospital Size^a

^a—NSPB hospital survey of RLF cases among live births
^b—Number of live births per year
^c—Children's hospitals where all were born elsewhere

Of the 1,117 hospitals that were surveyed, 399 (36 percent) responded initially and reported 33 cases of RLF (Table 1). Follow-up on a random sample of 24 percent of the nonrespondents yielded another 62 replies (a 35 percent response) and no cases of RLF. Unfortunately, there was no way of being certain that there were no cases among infants born in hospitals that did not respond or even in those that reported none.

☐ It was evident from the responses received that cases of RLF may go unrecognized prior to hospital discharge because eye examinations are no longer

RLF May Often Go Unrecognized

routine for infants receiving oxygen. Even for those examined, RLF may not be detected while the infant is in the hospital and follow-up of these infants is lacking after discharge. Also it may not be possible to retrieve all cases in retrospect from hospital records due to a lag in data processing or because this diagnosis may not be coded. In addition, since affected patients are seen infrequently, they may not be recognized by inexperienced physicians.

From the number of reported cases and crude estimate of the number of survivors from which they were drawn, it was encouraging to see that the proportion was not too different from the estimated experience over the last 10 years. Thus, this initial study, though very incomplete, provided no supportive evidence of a widespread epidemic of RLF.

The relationship between the size of the hospital and the incidence of RLF provided some provocative information. In the early days of oxygen-induced retinopathy the disorder was seen principally in large medical centers. Smaller hospitals with poor equipment experienced very little retrolental fibroplasia.

In the first survey it was disturbing to see that a significant number of the cases reported occurred in hospitals that had between 1,000 and 3,000 live births per year. This suggests that even small hospitals now have efficient incubators which make it easy to administer high concentrations of oxygen to premature infants. The potential for an epidemic is probably greater than it was 15 years ago.

More hospitals now administering oxygen

Birth Weight (grams)	RLF Type		Total
	Vascular	Cicatricial	
1901 and over	3	1	4
1501-1900	2	0	2
1101-1500	4	6	10
701-1100	9	7	17 ^b
Total	18	14	33 ^b

TABLE 2
Reported Cases of RLF by Birth Weight and Type^a

^a—NSPB hospital survey of RLF cases among 1967 births
^b—Includes one case type not reported

The distribution of grades of end-stage RLF reported in this survey should be brought to the attention of ophthalmologists. From past experience it is expected that in three out of four infants who develop this disorder, the blood vessel changes of RLF do not go on to the serious scarring (cicatricial) stage.⁶ However, results of the NSPB survey showed that approximately half ended in the vascular stage and half went on to scar (Table 2). I believe this indicates that many infants with vascular RLF were not examined. It reflects the fact that many ophthalmologists and pediatricians feel that the disease has disappeared and no longer routinely examine the eyes of premature infants. If we are to learn the true magnitude of the risk of the new determinative policy of oxygen administration, it will be necessary to examine all premature infants who are exposed to oxygen. From Table 2 it may also be noted that a majority of the cases, 82 percent, occurred among infants of very low birth weight, 1,500 grams or less.

Finally, some information on the indications for oxygen administration was obtained from the survey. In about 80 percent of the infants who were reported to have developed RLF, oxygen was being administered for respiratory distress syndrome (hyaline membrane disease). Many pediatricians have felt that it is relatively safe to administer oxygen to infants with hyaline membrane disease, because measurements indicate marked underoxygenation of arterial blood despite high concentrations of oxygen in inspired air. Although the lining tissue of the lung is exposed to high oxygen concentrations (and may be damaged) the eye should be at little risk. NSPB's survey brings up the possibility that the risk to the eye may be underestimated. I suspect that the undetected hyperoxia occurs at the time of recovery in hyaline membrane disease, when the oxygenation of the blood improves and the infant is then unknowingly exposed to higher concentrations of oxygen than are required.

□ The survey indicated that the eye risk is not zero when oxygen is given to an infant with hyaline membrane disease and emphasizes the need for careful monitoring of the blood especially during recovery.

Retrolental fibroplasia, the disease that we thought had practically disappeared is rearing its head once more as oxygen is being administered more liberally to premature infants. It is comforting to note that, as in the 1950's, the National Society has taken notice of the situation and is doing something about it.

Risks to eye underestimated

Conclusions

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Group Therapy in a Rehabilitation Program

In July 1965, the New York Association for the Blind (The Lighthouse), New York City, introduced group therapy sessions into its summer diagnostic program for high school students. The group sessions were conducted by William Generette, casework consultant, Saul Freedman, supervisor of psychological testing and counseling services, and the author, who was then a staff psychologist. The group consisted of three boys and four girls at the Queens Training Center of the Lighthouse. These young people were from upstate New York as well as New York City and were of college level intelligence. Although the sessions were only conducted Monday through Thursday over a four-week period for an hour each day, all of the group members felt that they had benefited from the experience, noting especially their being able to discuss their problems, to listen to the problems of others, and to find out more about themselves.

□ In the fall, after this program was completed, the question arose whether or not group therapy had any place within the rehabilitation agency itself. At the time there were many doubts and unknown factors, but today the Lighthouse uses not only group therapy, but group vocational counseling and group discussions as a part of the diagnostic phase of the rehabilitation program.

Although group therapy had never been programmed at the Lighthouse, it had been in rather widespread use in rehabilitation centers for the physically handicapped, the Veterans Administration, social agencies, schools, and colleges. In fact, it was around the turn of the century that group therapy originated when patients in a hospital setting were grouped to discuss their symptoms. It developed slowly as a therapeutic technique until the time of World War II, when it was used extensively with returning veterans. These veterans needed to talk out their problems, but there was a shortage of psychotherapists. By using group therapy, one therapist could treat eight to 10 persons at a time. At this point, scholarly papers began to be published on the subject and, in 1943, the American Group Psychotherapy Association was formed at the annual meeting of the American Orthopsychiatric Association. There was some resistance to the technique, especially among European-trained analysts, but it has become increasingly useful and generally accepted. It might be good to point out here that this technique is variously labeled, but, as Max Rosenbaum, a consultant in group psychotherapy, has said, "... the terms psychotherapy and counseling are not differentiated, since any relationship which permits the client to perceive his needs clearly is therapeutic."³

The usefulness of group therapy in a rehabilitation setting stems from the fact that those who are faced with a visual handicap are also often faced with

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The Use of Group Therapy in Rehabilitation

The development of group therapy

The problems of disability

psychological problems. Neff and Weiss, in the *Handbook of Clinical Psychology*, state:

The disabled person faces a very wide range of problems, the solution of which requires an extremely broad spectrum of professional experts. Whether the disability in question is a physical limitation or trauma, a variety of types of mental retardation, an emotional disorder, or some combination of these three coarse classifications, it has become evident that medical treatment is only one facet of what has become a many-sided process. To return the patient to some desired and improved level of functioning now necessitates the services of an almost bewildering variety of experts ranging from the orthopedic surgeon (ophthalmologist) at one end, to the vocational counselor and special educator at the other end.²

They go on to say that many of the problems of the disabled individual involve meeting and coping with the psychological barriers of a new adjustment to life rather than medical problems. Although the rehabilitation of a disabled person is now considered to be a truly comprehensive affair, involving the professional cooperation of an extremely diverse rehabilitation team, it is only within the last decade or so that psychologists have been playing an increasingly important role as members of this congeries of specialists in disability.

□ All clinical experience and the literature say that group therapy is useful and that it is appropriate in the rehabilitation setting. More specifically, it is useful in helping clients to learn to cope with the following behavioral reactions which are associated with disability: feeling inadequate to the stress of undergoing rehabilitation; handling the meaning of their loss; learning to accept reality in a flexible manner; learning to cope with frustration and conflict; coming to terms with guilt feelings; handling shock and the period of mourning; and learning to accept the altered body image.

Clients who have successfully participated in group therapy at the Lighthouse have not only been able to work through the behavioral reactions listed above, but have also faced their withdrawal from others, thoughts of suicide, anger, and self-pity. By learning to express their feelings and to share them with others, most clients soon see that other group members have reacted in similar ways. This process allows the clients to reach out to others, to make human contact.

Group therapy at the Lighthouse is conducted by psychologists who have been trained in the group therapeutic process. The staff psychiatrist, who is a member of the team, is regularly consulted. The groups, which meet for 90 minutes per week, vary in size and in the ages of the clients. All of the clients, however, have a common problem, learning to cope with their blindness. Not all clients, of course, are in group therapy: some are invited to come; some ask to be admitted to a group; others come once or twice, but decide against coming again; no one is ever compelled to attend if he does not wish to. The program is not conducted along traditional analytic lines, where the focus is upon the total alteration of the developed personality, but, rather, along re-educative and supportive lines using the interview technique which allow clients to enter and withdraw from the groups as their own needs dictate.

The Problems of Blindness

Experiences at the Lighthouse

How groups are run

Our clients are usually fairly well controlled, but, when some emotional or other problem arises, the group is available to them.

□ Experience to date has revealed that group therapy has been a valuable adjunctive therapeutic technique when programmed into prevocational and personal adjustment programs. The groups allow the clients to learn to modify their attitudes and feeling within the structure of the group and to transfer their new behavior from the group to less structured situations and later to the larger society.

1. Cartwright, D., et al. *Group Dynamics*. New York: Harper and Row, 1968.
2. Neff, Walter S. and Weiss, Samuel A. "Psychological Aspects of Disability." In *Handbook of Clinical Psychology*, edited by Benjamin B. Wolman et al., pp. 785-825. New York: McGraw-Hill, 1968.
3. Rosenbaum, Max. "Current Controversies in Psychoanalytic Group Psychotherapy," *Proceedings of the International Congress, Group Psychotherapy*, 1963.
4. Wilson, Edouard L. "Group Therapy Experience With Eight Physically Handicapped High School Homebound Students in a Prevocational Program," *Exceptional Children* 29 (1962):164-69.
5. Wolf, Alexander. "Short-Term Group Psychotherapy." In *Short Term Psychotherapy*, edited by Lewis R. Wolberg, pp. 219-55. New York: Grune and Stratton, 1965.

Conclusions

References

Total Loss of Sight and Hearing After Age 100 Found To Be Rarer Than Expected

A study of the decline in sensory ability in 270 male and female centenarians, some of them over 110 years old, revealed that only 5.2 percent were blind and only 1.9 percent were completely deaf, Dr. Belle Boone Beard reported recently in *Gerontologia Clinica*. In contrast, about 36.3 percent of the superannuated subjects rated their sight "good or excellent," and 30.2 percent similarly rated their hearing. These figures are significant because of the general impression that most people become blind and/or deaf in extreme old age, said Dr. Beard, who is associated with the Research Center at Lynchburg (Va.) College.

It is almost never possible or practical to get centenarians to a clinic for performance testing, she explained. The data in this study were obtained in interviews with the subjects, and from their responses to a list of 104 physical functions commonly performed by normal people in daily life. . . .

Those who rated their sight "good or excellent" included more men than women (40.9 vs. 32.9 percent). More than half used spectacles, but with or

Subjects were interviewed

without correction they were able to read, watch TV, and do needlework. About 58.5 percent of the subjects reported fair or poor vision. Among them were slightly more of the women (60.0 percent) than of the men (56.5 percent). Generally these very old people could read only with a magnifying glass, or their reading was confined to the headlines. However, they were able to perform familiar tasks, feed themselves, move about in familiar surroundings, etc. Though their sight was quite limited, they were not entirely dependent. . . .

While visual acuity appeared to decline earlier, especially in women, more of both sexes suffered from hearing difficulties at age 100. The 67.9 percent who reported only "fair or poor" hearing included a slightly larger proportion of the male subjects (68.4 percent) than of the female (67.4 percent).

In an earlier study of the 270 centenarians, 27.5 percent had stated that they could not see well enough to read. In the present survey—made one to four years later—36.5 percent of those who *could* read at age 100 now reported themselves unable to do so. Decline in hearing ability followed essentially the same pattern.

□ Analysis of the data and comparison with other studies suggest the following conclusions, Dr. Beard said:

1. In extremely old age, visual acuity reaches a plateau for several years, then sight disappears very rapidly. Loss of hearing is more gradual, extends over a longer period of time.

2. Adjustment to loss of hearing is more difficult than adjustment to loss of sight.

3. Though women experience more loss of vision than men, the latter experience more hearing loss. The difference between sexes in hearing acuity increases with age.

4. Negroes reported less loss of hearing than whites, but more loss of vision. More aged Negroes than whites have good uncorrected vision, but fewer Negroes have good corrected vision. . . .

Conclusions

Reprinted with permission from *Geriatric Focus* (January 1970), a monthly publication of the Knoll Pharmaceutical Company, Orange, New Jersey.

The subscription list of the *New Outlook for the Blind* is being put into a computer to modernize and streamline the maintenance of the list. The conversion is beginning with the inkprint edition; the braille and recorded editions will be converted later in the year. As with any conversion of this type, there will undoubtedly be problems and confusion at first. Every effort, however, is being made to minimize the difficulties and to quickly correct those which do arise. Your cooperation in notifying us of errors will be greatly appreciated.

Vision of South Dakota Nursing Home

Residents Is Tested

A vision screening project of the South Dakota State Service to the Visually Impaired, Pierre, begun in July 1969 and specifically aimed at the elderly residents of nursing homes throughout the state, has discovered that more than a quarter of these individuals have severe visual impairments. The project is jointly sponsored and financed by the South Dakota Association for the Blind, the South Dakota Lions Sight and Service Foundation, the South Dakota Optometric Association, and the Governor's Advisory Council on Aging, with matching federal funds from Title III of the Older Americans Act.

The original impetus for the project came from reports of national and local surveys that indicated that 17 to 20 percent of the residents of nursing homes were eligible for services and needed them but were not receiving them. Several interested individuals felt that possibly the same situation might be present in South Dakota and that something should be done to locate and identify these persons.

Surveys provided impetus

"The initial goal of the project," says Howard H. Hanson, director of the S.D. State Service to the Visually Impaired, "is to identify nursing home residents who have visual problems and refer them for proper eye care." Prior to screening, a survey is made of the nursing home's medical records to determine which residents are under treatment for visual disorders and which residents have recently received vision evaluation. These persons were not included in the survey. The screening takes place right in the home and is conducted by an optometrist or ophthalmologist from the area, with local volunteers aiding in the recording of information.

The first report of the project, issued in March 1970, shows that vision screening was carried out in 29 homes having a total population of 1,070 individuals. As a result of the screening 298 persons were found to have severe and previously undiagnosed visual problems and were referred for further evaluation or services. Joy Leslie Massie is the coordinator of the Vision Screening for the Aged Project.

First report

Our office supply of the January, February, and May 1968 and the January 1969 issues of the *New Outlook for the Blind* is almost exhausted. If you no longer need or want your copy of any of these issues, please return it to us. We will pay you 60¢ plus postage for each copy.

From the Field

From the Field is a continuing series of reports from the American Foundation for the Blind's specialists and regional consultants on new ideas and practices they have come across in their travels. This report is by Edward R. Murray of AFB Region V (Montana, North Dakota, South Dakota, Wyoming, Nebraska, Colorado, Kansas, Oklahoma, New Mexico, and Texas).

TOWARD GREATER EFFICIENCY

In order to expedite referrals and to improve overall services to the blind and visually handicapped, a number of agencies within Region V have initiated simple but effective administrative procedures.

Taking Service to the People

Within Region V more and more district offices are being opened. This is in keeping with the administrative concept that the closer the office to the people, the better the service. Notwithstanding this movement, a drive of 150 to 200 miles to visit a client in his home is not unusual. It is recognized that home visits are most important, particularly when the rehabilitation teacher is offering sustained service. The frequency of home visits or telephone contacts may be the key to success.

To negate the travel problem as much as possible, one state agency has successfully set up several clinics in cities which are located many miles from the closest district office. These clinics last several days and are designed to offer visual examination, preliminary adult rehabilitation counseling, and preliminary services to children. The professional staff of this agency unanimously agreed that many clients responded to this approach who previously were unreachable. In fact, utilization of staff time coupled with community participation has been tremendous.

In another state, visual screening is offered elderly residents of licensed nursing homes and homes for the aged. The co-

ordinator of this program and an optometrist or ophthalmologist conduct examinations on a pre-scheduled basis right in the home. The goal of this program is to offer service to every licensed nursing home and every home for the aged within the entire state. Those individuals in need of more definitive examination and treatment are referred to the proper source by the project coordinator.

Efficiency of Supervision Is Increased

With an increase in professional staff in several of the states, it is noted that improved supervisory techniques have been developed. Since many new staff members come from related fields, such as education and nursing, concentrated orientation and indoctrination programs, coupled with ongoing in-service training programs of a high caliber, are now being funded.

Supervisors are utilizing improved statistical forms which will show actual case count, including referral information and activity or lack of activity on each case. Some supervisors are making a specified number of "entire caseload" reviews on a regular basis in order to be more helpful to the counselor and to the client. This review calls for a careful study of each record, active and inactive, carried in the caseload of the respective counselor.

In some states, the team approach is being used with good results. The rehabilitation counselor and the rehabilitation teacher work together during at least a portion of the total rehabilitation program.

Fast Response

Whenever a response to a referral through a personal contact is not possible within a few days, several agencies delegate to a secretary the responsibility of immediately mailing out an application form, along with other material on available services, to the client or to the individual making the initial request. This immediate re-

sponse assures the sources of the referral that there is interest in the present problem and indicates that personal attention will be forthcoming. Proponents of this system feel that in addition to being a sound administrative practice, the degree of motivation present in the client can often be judged by the rapidity with which the application form is completed and returned to the office.

A card index system is often used and is reviewed at the beginning of each month by the secretary and by the office manager. Thus, it is unlikely that a referral will be "lost in the shuffle." This procedure also enables the supervisor to review those applications which have been sent out but not returned to the office within a reasonable period of time. Appropriate action can then be taken to initiate contact with the client or the source of the referral.

Use of Telephone

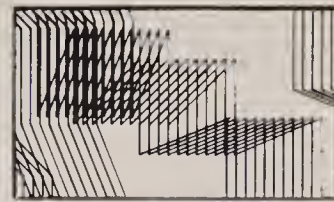
It has been demonstrated that a positive relationship with clients living many miles from the state or district office can be fostered more rapidly by use of the telephone (WATS or toll call). Those agencies authorizing professional staff to augment home visits by frequent telephone interviews have found that client participation is more enthusiastic and more meaningful. The counselors recognize also that a continued show of interest by the person representing the agency is essential in maintaining a positive client-counselor relationship. The result is better service to a greater number of clients.

Improved supervision is being carried out in an increasing number of agencies by the medium of regularly scheduled telephone conferences. Again, the use of the WATS line can save much travel time. Such conferences promote sustained service to the clients and enable the supervisor to keep abreast of all clients requesting service.

Answers to Accreditation Questions

National Accreditation Council for Agencies

Serving the Blind and Visually Handicapped



Q. Our agency serves people with several types of disabilities—blindness among them. Will NAC accredit us? Will we have to go through more than one accreditation process?

A. NAC accredits agencies with a variety of programs which serve blind and visually handicapped people. NAC also works closely with other accrediting bodies. One reason for this is to avoid duplication of effort on the part of the agency that seeks accreditation. Thus, your agency might be jointly accredited by NAC and another accrediting agency. Or a plan might be worked out for one body to use the other's report in making its decision. Each case is handled individually. The aim is to find the simplest and most effective way—for you and for the accrediting

bodies—to conduct the accreditation process.

Q. I have heard it said that even a deferment of accreditation can help accomplish long-sought improvements. Why is that?

A. Sometimes the agency or school administrator has not been able to convince those who hold the pursestrings that changes are really needed. The findings of an objective, outside group of qualified people (the on-site review team and the Commission on Accreditation) may provide convincing evidence of the need. In several cases where this has happened, adequate support and resulting improvements have made accreditation possible. Those who benefit most, of course, are

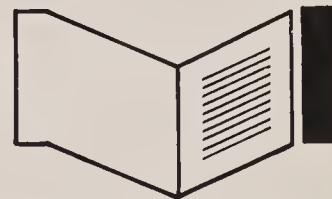
the blind and visually handicapped people whom you serve.

Q. What is the deadline for Charter Accredited Membership in NAC?

A. To qualify as a Charter Accredited Member, an agency or school must have presented its application for accreditation on or before December 31, 1970, and have completed its self-study by July 31, 1971. Is your application in?

What is your question about accreditation? Send it to the National Accreditation Council, Suite 1406, 79 Madison Avenue, New York, N.Y. 10016. If it is of general interest, we will try to answer it in this column, but you will in any case receive a direct, prompt reply.

Current Literature



The Effect of Texture on Tactual Perception of Length, by Kenneth A. Hanninen. *Exceptional Children* (The Council for Exceptional Children, Jefferson Plaza Suite 900, 1499 Jefferson Davis Highway, Arlington, Virginia 22202), Vol. 36, No. 9, May 1970, pp. 655-59. Report on a test conducted with 29 blind and 78 sighted elementary and junior high school students.

The Preschool Blind Child by Rose T. Grossman. *The Seer* (Pennsylvania Association for the Blind, 2843 N. Front St., Harrisburg, Pennsylvania 17110), Vol. 41, No. 1, March 1970, pp. 3-9. Paper, presented at the AAWB Pennsylvania-Delaware Chapter meeting in Philadelphia, December 1969, discusses how the social case-worker helps parents to care for and understand their blind baby.

Some Consequences of the Boarding School Education of the Visually Disabled; a Study of the Reported Experiences of Parents and Former Pupils, by J. N. Langdon. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London W1N 6AA, England), Vol. 54, No. 634, February 1970, pp. 32-38, 47. Report on a three-year survey sponsored by the Nuffield Foundation at the School of Education, Birmingham University, England.

Hints for Blind Mothers. *The New Beacon* (see address above), Vol. 54, No. 635, March 1970, pp. 58-63. Advice from the blind mother of two children—now aged 9 and 7—based upon her personal experience in bathing, changing, feeding, and general caring for babies and toddlers.

Family Services, by Donald H. Edwards. *The Utah Eagle* (Utah Schools for the Deaf and the Blind, 742 Harrison Boulevard, Ogden, Utah 84404), Vol. 81, No. 6, March 1970, pp. 1-4. The principal of the Utah School for the Blind outlines the ways in which his school involves parents and families as active participants in a team effort to develop the full potential of students.

Blind Children Learn to Relate by Elizabeth Johnson and Thelma Merriweather. *American Libraries* (American Library Association, 50 East Huron Street, Chicago, Illinois 60611), Vol. 1, No. 2, February 1970, pp. 168-69. Description of the resource program at the Windsor Spring Elementary School in Augusta, Georgia, which serves three partially sighted and three blind children.

Programmed Learning for the Blind; Some Exploratory Studies, by M. J. Tobin, D. Clarke, I. Lane, and V. G. Pittam. *Education of the Visually Handicapped* (1839 Frankfort Avenue, Louisville, Kentucky 40206), Vol. 2, No. 1, March 1970, pp. 11-23. Report on experiences with programmed instruction in Great Britain.

The Importance of Music in the Life of a Visually Handicapped Child, by Forrest and Dorothy Goodenough. *Education of the Visually Handicapped* (see address above), Vol. 2, No. 1, March 1970, pp. 28-32. Mrs Goodenough is head of the Department of Music and teacher of stringed instruments at the Texas School for the Blind, Austin. Mr. Goodenough is teacher of piano and organ at the Texas School.

Development of Geographical Concepts in Blind Children, by Frank L. Franks and Carson Y. Nolan. *Education of the Visually Handicapped* (see address above), Vol. 2, No. 1, March 1970, pp. 1-8. Report on tests attempting to discover how and at what age the geographical concepts necessary to full understanding of tactual maps are developed.

So You're Thinking of Getting a Dog Guide, by Beverly Butler. *Dialogue* (Dialogue Publications, 3100 Oak Park Avenue, Berwyn, Illinois 60402), Vol. 9, No. 1, Spring 1970, pp. 64-69. Report on a survey conducted by *Dialogue* of seven dog guide schools in the territorial U. S. Covered are: Eye Dog Foundation and Guide Dogs for the Blind, both in California; Leader Dog, Michigan; Pilot Dogs, Ohio; Guiding Eyes for the Blind and

Second Sight, both in New York and Seeing Eye, New Jersey.

Peculiarities of Mental Development of the Blind, Deaf and Mute Child in Process of his Elementary Education by A. I. Meshcheryakov. *Blind Welfare, Southern Regional Review* (Southern Regional Association for the Blind, 14 Howick Place, London, S.W. 1, England), No. 49, September 1969, pp. 3-5. Professor Mescheryakov, principal of the Academy of Pedagogical Sciences, Institute of Defectology in Moscow, prepared this lecture for presentation at a deaf-blind study week-end held at Sussex University in August 1967.

Employment of Qualified Teachers in Teaching Positions in the Public School Systems at both the Elementary and the Secondary Grade Levels, Proceedings of the Regional Training Institute held at The Lighthouse, New York City, March 18 and 19, 1969. Rehabilitation Services Administration RSA Grant 763-T-69. New York, The New York Association for the Blind, 1969, vi + 74 p. The proceedings, which include the texts of addresses given by rehabilitation counselors, leading educators, and blind teachers; summaries of workshops; and the results of a survey on employed blind teachers and enrolled blind college students in the United States, are available free while the supply lasts from Mr. William F. Gallagher, director, Rehabilitation Services, New York Association for the Blind, 111 East 59th Street, New York, N. Y. 10022.

IEEE Transaction on Man-Machine Systems Vol. MMS-11, No. 1, March 1970. Special issue containing papers presented at the

Conference on Tactile Displays held at Stanford Research Institute, Menlo Park, California, April 3-4, 1969. Copies may be ordered from the Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, N. Y. 10017. The issue has 122 pages and sells for \$5.00.

Visual Acuity of Children, United States. Washington, D. C., U.S. Health, Education, and Welfare Department. Public Health Service Publication No. 1000, Series 11, Number 101. February 1970. 35 p. (Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402 @ 45¢ per copy.) The subtitle of this *Vital and Health Statistics* selection from the first findings report of a new cycle of the Health Examination Survey conducted in 1963-65 is: "Vision testing methods with uncorrected monocular and binocular visual acuity findings by age and sex among children 6-11 years of age."

Four manuals by S. E. Bourgeault have been published by the Far East Regional Office of the American Foundation for Overseas Blind. They are: *Glossary of Professional Terms; For Use in the Area of Service to the Visually Impaired in Asia*; June 1969, vii + 56p.; *Methods of Teaching the Blind: The Language Arts*, October 1969, v + 48p.; *Preparing Teachers of the Blind in Asia*, January 1970, vii + 27p.; and *Integrated Education for Blind Children*, March 1970, v + 62p. The manuals cost \$1.00 each and must be ordered from American Foundation for Overseas Blind, Inc., Far East Regional Office, P. O. Box 2285, 193 Galan Abdul Samad, Kuala Lumpur, Malaysia.

M. M. R.



■ A joint graduate program in educational gerontology, the first of its kind in this country, has been established at the University of Michigan, Ann Arbor, by the School of Education, University of Michigan, and the Institute of Gerontology, Wayne State University-University of Michigan. The program is directed by a joint committee composed of faculty of the School of Education and the Institute of Gerontology. Student admittance, provision of financial aid (to be provided by the Institute with the assistance of a training grant from the U.S. Administration on Aging), curriculum development, and evaluation will be the responsibility of this group. Additional information on the program is available from Dr. David Peterson, Committee on Educational Gerontology, University of Michigan, 1021 East Huron Street, Ann Arbor, Michigan 48104.

■ Special telephone services and charges for the hearing handicapped are being reviewed and lowered by many Bell System telephone companies. Cooperating in the review is the Alexander Graham Bell Association for the Deaf, Washington, D.C. Lower rates not only benefit present users of the amplified telephone but encourages other hard of hearing people to become users.

■ Effective April 1, 1970, the activities of publishing and distributing tests, formerly carried out by the Test Agency, National Foundation for Educational Research for England and Wales, were transferred to a wholly-owned subsidiary, NFER Publishing Company, Ltd., 2, Jennings Buildings, Thames Avenue, Windsor, Berkshire, England.

■ The National Association of the Deaf, Silver Spring, Maryland, is currently conducting a national census of the deaf with funding provided by the Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare. The census hopes to provide a highly accurate estimate of the size of the deaf population, its geographical distribution, and certain selected characteristics of people with hearing impairments. Agencies and individuals are urged to send the names and addresses of deaf persons (children and adults) to the National Census of the Deaf, P.O. Box 14262H, Ben Franklin Station, Washington, D.C. 20044.

■ Apollo Lasers, Inc., Los Angeles, has announced the availability of a closed circuit television reading system designed specifically to aid people with severe visual impairments. The system, called Magnavision, sells for \$3,295, FOB Los Angeles. Further information is available from Apollo Lasers, Inc., 6365 Arizona Circle, Los Angeles, California 90045.

■ The Bureau of Education for the Handicapped, U.S. Department of Health, Education, and Welfare, is initiating a campaign to attract young Americans to careers in special education. At the same time, through national media, the U.S. Office of Education is informing parents, teachers, and friends of handicapped children that they can obtain information about special education facilities by writing to "Closer Look," Box 1492, Washington, D.C. 20013. Through these two efforts, it is hoped that more people will become aware of special education, that more will utilize the services available, and that more will be attracted to the field as teachers.

■ The National Heart Institute, one of the National Institutes of Health, U.S. Public Health Service, has been renamed the National Heart and Lung Institute.

■ A cooperative effort to strengthen the federal ban on age discrimination in employment was announced last spring by John B. Martin, commissioner on aging, U.S. Department of Health, Education, and Welfare, and Robert D. Moran, administrator of the Wage and Hour Division, U.S. Department of Labor. A memorandum of understanding, signed by both officials, states that state and local units on aging and Wage and Hour Division field personnel will work together throughout the country to publicize the existence and provisions of the Age Discrimination in Employment Act of 1967 and to inform potential victims of age discrimination how to obtain relief.

■ The newspaper *Daily Politika* in Belgrade, Yugoslavia, has reported, according to an Associated Press story, that experts in Slovenia had developed a "talking typewriter" for blind people that identifies punctuation marks with such sounds as "pim," "pum," and "pam."

■ A change in the structure of the Genesee Federation of the Blind, Inc., Flint, Michigan, has resulted in the separation of the social service agency from that of the organization. The agency, now the Service Center for Visually Impaired, Inc., will continue the work of aiding persons in the adjustment to the loss of sight through education, counseling, and recreation. Mrs. Betty McWethy is the executive director. The Federation will continue as a membership organization engaged in social and legislative activities.

People

■ William H. English, formerly principal of the Department for the Blind, Virginia School for the Deaf and the Blind, Staunton, is the new superintendent of the Wisconsin School for the Visually Handicapped, Janesville.

■ Arthur L. Brandon, president of the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, New York City, has announced the election of three new members to the Council's board of directors: Mary E. Switzer, vice president of the World Rehabilitation Fund, Washington, D.C., and former administrator of the Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare; Morton Pepper, a New York attorney and honorary president of the Jewish Guild for the Blind, New York City; and Donald W. Flynn of Providence, Rhode Island, a banker and president of the Rhode Island Association for the Blind.

■ Milton A. Jahoda, executive director of the Cincinnati Association for the Blind, has been named to the Ohio Commission for the Blind, a seven-member body that serves in an advisory capacity to the Ohio Bureau of Services for the Blind.

■ The Catholic Guild for All the Blind, Newton, Massachusetts, has announced several changes in its administrative structure. The Rev. Thomas J. Carroll, executive director of the Guild since 1946, has been named director of professional policy and development. The Rev. Robert H. Carolan, former assistant executive director, is now temporary executive director. A search committee, headed by the president of the Guild's board of directors, Professor Robert W. Mann, has been established to find a permanent executive director. The changes were made following a request from Father Carroll to the board of directors.

■ The board of directors of the International Association of Rehabilitation Facilities has announced the appointment of Charles L. Roberts to the post of executive vice-president. Mr. Roberts, former director of the Association of Rehabilitation Centers, has been serving as co-executive director of IARF with Antonio C. Suazo, former executive director of the National Association of Sheltered Workshops and Home-bound Programs. ARC and NASWHP merged in November 1969 to form IARF.

■ William Aramony of Miami, Florida, has been appointed executive vice president of the United Community Funds and Councils of America, a national association of United Funds, Community Chests, and Planning Councils in 2,260 communities throughout the nation, which last year raised \$817 million for distribution to 36,000 health and welfare agencies. In his new post, Mr. Aramony, who was formerly with the United Fund of Dade County, Florida, is responsible for providing national leadership in health and welfare policy formation and coordination of Association services to members.

■ Eric T. Boulter, associate director of the American Foundation for Overseas Blind, New York City, will be leaving the service of that organization at the end of September to return to his native England.

During his 22 years of service with AFOB, first as assistant European director, then as field director and finally associate director, Mr. Boulter traveled nearly half a million miles and visited 60 countries on behalf of AFOB and its activities in the field of education and rehabilitation of the blind and prevention and treatment of blindness.

Mr. Boulter, who served from 1964 to 1969 as president of the World Council for the Welfare of the Blind, was a member of the international committee that laid the groundwork for the establishment of the Council. He will continue to be active in the field of international blindness by remaining a member of the Executive Council of WCWB and by serving as a consultant to international bodies on rehabilitation and education of the blind.

Awards

■ Ross L. Huckins, a member of the teaching staff of the California School for the Blind, Berkeley, has been cited as the outstanding special education teacher of the year by the California State Federation, Council for Special Education. Mr. Huckins, who has been a teacher of the blind for 24 years, was instrumental in promoting scout activities for visually handicapped boys. He is the author of *Springboard to Scouting* and is active in the adaptation of science instruction materials for blind children.

■ Rowena C. Piety, director of special education in the Hammond, Indiana, public school system, has received the John E. Fogarty Public Personnel Award for 1969 from the President's Committee on Employment of the Handicapped. Miss Piety was cited for her outstanding and dedicated efforts in pioneering and developing special education programs which have opened up new opportunities for handicapped children.

■ William P. McCahill, Arlington, Virginia, executive secretary of the President's Committee on Employment of the Handicapped, received the AMVETS Silver Helmet Award in recognition of his quarter century of exceptional contributions in the field of rehabilitation of the disabled. The award was presented on April 18 at the 13th Annual Awards Banquet of the AMVETS held in Washington, D.C. The AMVETS—the American veterans of World War II, together with those Korean and Vietnam veterans who have become members—honored several distinguished Americans in observance of their 25th Anniversary Year.

■ In June, Dr. Mae Davidow, a member of the faculty of Overbrook School for the Blind, Philadelphia, was given the Annual Achievement Award of Phi Delta Gamma, the national scholastic sorority. The presentation of the award took place at the organization's national meeting in Lincoln, Nebraska.

■ The 1970 Scholastic Achievement Awards of Recording for the Blind, Inc., New York City, were presented on May 15 by Mrs. Richard M. Nixon at a ceremony at the White House. The awards, which are conferred annually in recognition of remarkable academic performance by blind students went to Mary Jane Cummings, Austin, Texas (University of Texas), Linda Edwards, Boise, Idaho (Idaho State University), and Ann Marie Pasquale, Short Hills, New Jersey (Catholic University of America, Washington, D.C.). Each award-winning student also received a check for \$500.

Films

■ *The Low Vision Patient*, a new training film produced by the New York Association for the Blind, New York City, features the staff of ophthalmologists of the Low Vision Clinic discussing acuity testing, refraction, prescription, choice of aid, and follow-up. The film also shows the staff working with actual patients in the clinic, with discussion and commentary led by Eleanor E. Faye, M.D., director of the clinic. *The Low Vision Patient* (16 mm., color, sound, 40 minutes) is available for rental or purchase from the Medi-

cal Department, New York Association for the Blind, 111 East 59th Street, New York, N.Y. 10022.

■ Two films from Israel, *Rehabilitation of the Blind in Israel* (20 minutes) and *Rehabilitation of the Blind in Textile Occupations* (30 minutes), are available from the Division of International Activities, Social and Rehabilitation Service, 330 C Street, S.W., Washington, D.C. 20201. Both films are 16 mm., black and white with sound.

Coming Events

September 6-12 Fifteenth International Conference on Social Welfare, International Council on Social Welfare, Manila, Philippines.

September 24-25 American Association of Workers for the Blind, Middle Atlantic Regional Meeting, New York City.

September 25-27 American Association of Workers for the Blind, Western Regional Meeting, Hollywood, California.

September 26-30 National Rehabilitation Association, Annual Conference, San Diego, California.

September 27-October 1 National Recreation and Parks Association, Philadelphia.

October 4-8 National Industries for the Blind, Annual Meeting of the General Council of Workshops for the Blind, Denver.

October 5-9 American Academy of Ophthalmology and Otolaryngology, Las Vegas.

October 11-14 Professional Rehabilitation Workers With the Deaf, Rochester, New York.

October 12-16 Audio Engineering Society, New York City.

October 17-22 American Academy of Pediatrics, San Francisco.

October 22 Foundation Day, American Foundation for the Blind, New York City.

October 26-30 American Public Health Association, Annual Meeting, Houston.

October 28-29 American Association for World Health, Annual Meeting, Houston.

October 28-31 National Association for Retarded Children, Minneapolis.

November 4-7 National Easter Seal Society for Crippled Children and Adults, Annual Convention, Chicago.

November 7-13 American Occupational Therapy Association, New York City.

November 19 National Society for the Prevention of Blindness, Annual Meeting, New York City.

December 1-5 Special Education Media Conference, Council for Exceptional Children, San Antonio.

December 13-18 White House Conference on Children and Youth, Washington, D.C.

1971

April 18-24 Council for Exceptional Children, 49th Annual International Convention, Miami Beach.

May 17-20 National Braille Association, 11th National Conference, Chicago.

Sensi-Quik

The Touch Cane for Walking
Faster with Safety



The New Fiber-Glass Cane

Sensi-Quik's shaft is made of large diameter, tapered tubular fiber-glass with gleaming white pebble finish, and has a bright red band at its tip. The smart-looking contour handle is of black vinyl. The 1/2-inch diameter, diamond-hard, tungsten-carbide working tip resists wear, and produces sharp, useful touch information. The cane is put together with epoxy, as fiber-glass golf clubs are, to withstand repeated sudden impacts.

The Sensi-Quik fiber-glass model comes with either crook or contour handle and either carbide or replacement steel tip. Sensi-Quik is also available in high-strength, nickel-plated, steel shafts recommended for 50- to 60-inch canes when extra strength is desired. The steel shaft adds three to four ounces to the weight of the cane.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact



Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

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New York, N.Y. 10028

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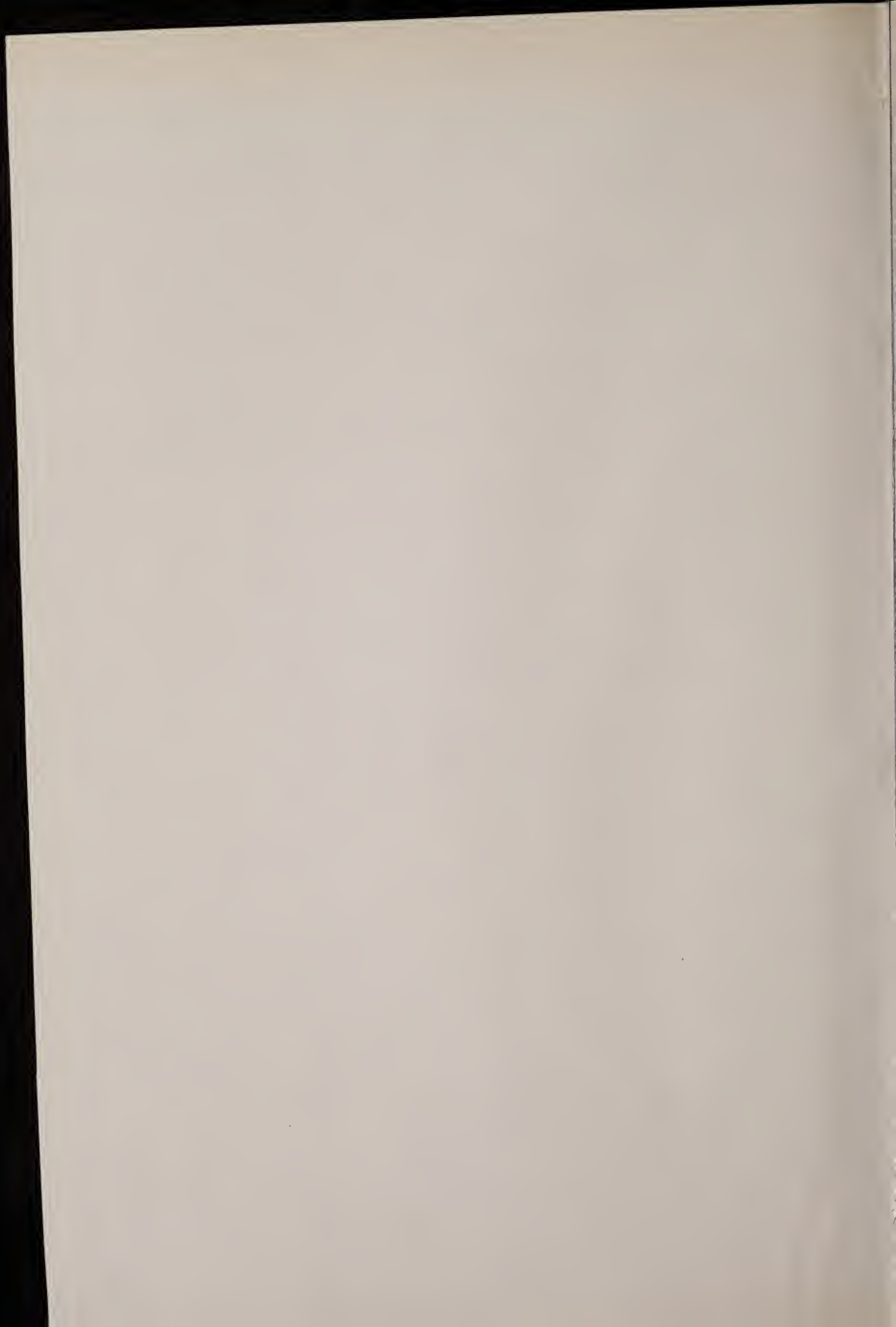
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Teaching the Concept of the Diagonal During Handwriting Lessons for the Congenitally Blind

Congenitally blind youngsters may have difficulty learning to write some letters of the print alphabet. Though due in part to a lack of fine muscle coordination in the fingers and hand which results in a poor ability to hold and control a pencil, another factor may be a lack of ability to visualize.

The most common approach with inexperienced blind youngsters is to teach the block capital alphabet first. The letters seem simpler, contain mostly straight lines and simple curves, are easier to illustrate than the lower case letters in terms of vertical space required, and are certainly less complex than script letters. With this approach, one does avoid several potential areas of difficulty. Even so, in many cases, a problem is still likely to occur with the concept of the diagonal line that is necessary to the formation of many block capital letters.

□ In the initial phases of handwriting instruction, the most easily grasped concept is that of the straight line, as long as that line is either vertical or horizontal, as in E, F, I, H, L, or T. More difficult to control, but fairly simple to describe or illustrate to the blind student is the circle, or parts thereof, involved in the formation of such letters as D, C, O, P, G, and B. However, the diagonal line seems to present severe problems in visualization. The misconception that a slanted line is necessarily not a straight line is common. Too, there is a lack of understanding at some level that one's pencil can go simultaneously in two directions, such as "down and to the right," and yet not form two separate lines. Such diagonal lines are required in K, M, N, R, V, W, X, Y, and Z. They are often learned by repetition of the motion of writing them, whether gross or fine, with dependence on muscle memory rather than visualization of the lines and their place in the completed letter. When there is no visual concept of the letters used in a signature, or of the signature itself, retention of the ability to write it is poorer, and constant practice is necessary to maintain that ability.

□ The following is a plan of lessons in the concept of the diagonal and the basic understanding of the diagonal line. It has been used with success with inexperienced or otherwise limited congenitally blind youngsters and young adults.

The lessons are based on the assumption that the individual involved is familiar with the braille cell formation. (If not, the basic cell formation can be taught using the commonly designated dot numbers; there is no need to learn the braille system—only the cell formation.) It is further assumed that the student has an adequate understanding of simple directions like "right," "left," "up," and "down," as they apply to positions and movements on a piece of paper lying flat on a desk in front of him. The equipment

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Diagonal Is Often Difficult to Visualize

A Plan of Lessons

used in these lessons includes a writing guide (to provide vertical limits to the letters written) and a model of a braille cell (diagram 1) that can easily be made from wood or imitated by taping off all but six holes of a peg-board to resemble a cell.

SECTION I. DEFINITIONS.

Lesson 1. Terminology.

Part A. Discussion.

Horizontal line—A straight line that goes from right to left, or from left to right, of any length, and at any given distance between the top and bottom guides.

Vertical line—A straight line that goes from top to bottom, or from bottom to top. It can only be as tall as the distance between the guides.

Top of the paper—The part of the paper furthest from the writer.

Up—Toward the top of the paper.

Above—Further away from the writer, relative to something else on the paper.

Bottom of the paper—The part of the paper nearest the writer.

Down—Toward the bottom of the paper.

Below—Nearer to the writer, relative to something else on the paper.

Across, Right, Left—Directions given for the formation of a horizontal line.

Up, Down—Directions given for the formation of a vertical line.

Diagonal line—Any straight line which does not go *directly* up and down, nor *directly* right and left. Synonyms: tipped, at an angle, oblique, sloping, cornerwise.

Part B. Practice With Horizontals.

The student should demonstrate an ability to locate the top, bottom, sides, and center of a single sheet of paper on the desk before him. He should be able to identify relative positions of two objects placed on the paper.

Lesson 2. Kinds of Lines.

Part A. Discussion.

For the purpose of printing, there are two kinds of lines—straight (whether vertical, horizontal, or diagonal) and curved. Avoid discussion at this time about other kinds of lines, such as “crooked,” “bent,” or “zig-zag.” The difference between curved lines and straight lines should be established clearly before continuing the lesson, which will deal only with three types of straight lines—horizontal, vertical, and diagonal.

Part B. Practice With Horizontals.

Draw straight lines of varying length from left to right. Draw straight lines of varying length from right to left.

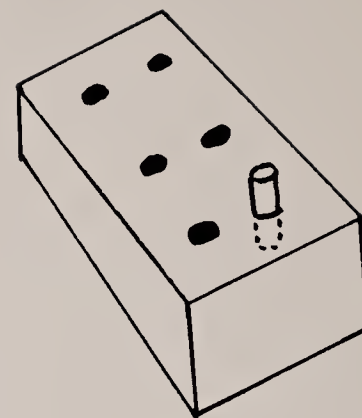


Diagram 1. Model of a braille cell.

Overall dimensions: l. $3\frac{1}{4}$ " x w. $2\frac{1}{4}$ " x d. $1\frac{1}{4}$ "; holes: $\frac{1}{4}$ " diameter, $\frac{1}{2}$ " deep; centers of holes are $\frac{5}{8}$ " from edges of block and 1" from each other; pegs are $\frac{1}{4}$ " diameter, 1" long.

Part C. Practice With Verticals.

Draw straight lines of varying length (within the writing guide) from bottom to top. Draw straight lines of varying length (within the writing guide) from top to bottom.

SECTION II. ILLUSTRATING THE DIAGONAL.

In order to dispel the erroneous but fairly commonly believed idea that a diagonal line is of necessity not a straight line, the instructor must illustrate the diagonal as a straight line in such a way that the student understands that it *is* a straight line, and classes it automatically with the other two types of straight lines, the horizontal and the vertical.

Using two straight objects, such as a ruler and a pencil, introduce the terms "parallel" and "perpendicular." Although these may seem too sophisticated for this discussion, they are common words, and represent concepts which are basic and must be understood.

Lesson 1. Parallel Lines.

Part A. Demonstrations (see diagram 2).

1. Place the two objects side by side, and explain "parallel." Emphasize that the two objects are straight.
2. Place the objects an inch or so apart. Repeat the explanation of "parallel" and the reminder that they are both straight.
3. Repeat steps 1 and 2 in both vertical and horizontal positions.

Part B. Practice.

1. Place the first object in various positions, each time requiring the student to place the second object parallel to the first.
2. Place the two objects in various positions, some parallel and some not parallel, each time requiring the student to identify the position as "parallel" and "not parallel" and to explain why.

Lesson 2. Perpendicular Lines.

Part A. Demonstration (see diagram 3).

1. Place the two objects perpendicularly, with the end of the first meeting the side of the second in about the middle, and explain that one is horizontal and the other vertical, and that they go in opposite directions. Emphasize that they are both straight.
2. Reverse their positions, but mention that the horizontal and vertical components have been maintained.
3. Slide one along the other. Note repeatedly that both objects are straight, and that in every position they are still perpendicular.

Part B. Practice.

Follow the method of practice described under parallel lines, substituting the word "perpendicular" for "parallel."

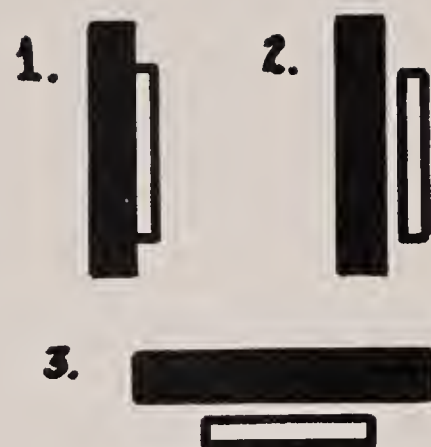


Diagram 2.

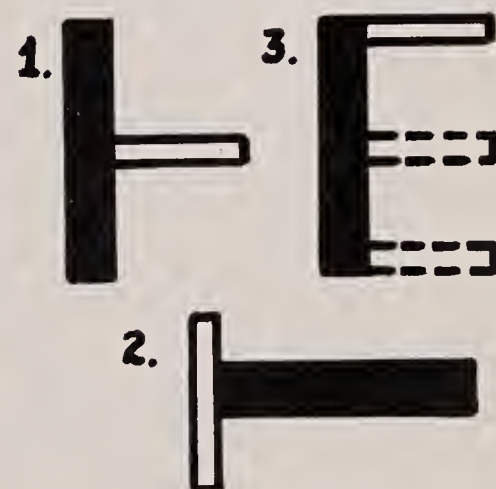


Diagram 3.

Lesson 3. Diagonal Lines.

Part A. Demonstration (see diagram 4).

1. Lay the first object in a vertical position, and state that it will not be moved, that it is permanently in place.
2. Place the second object in an oblique position, so that one end touches the first object somewhere along its length. Remind the student that the second object is still straight.
3. Demonstrate that the second object is *not parallel* to the first object.
4. Demonstrate that the second object is *not perpendicular* to the first.
5. Identify the position of the second object as *diagonal*, and remind the student again that it is straight, not bent or curved.

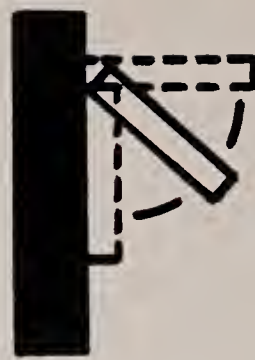


Diagram 4.

Part B. Practice.

1. Place the first object in various positions, and require the student to place the second object diagonally to the first.
2. Place the two objects in various positions, with the second object always diagonal to the first, asking the student to prove first that the second is not parallel to the first, so as to arrive at the decision that the second must be diagonal.

Lesson 4. Review.

Repeat discussion and practice from each lesson of Section II.

SECTION III. RELATIVE POSITIONING.

Lesson 1. One Dimensional Relativity.

Using the model cell or pegboard, review the dots by number (see diagram 5). Then, further identify each dot according to its position in the cell as "upper left," "middle left," "lower left," "upper right," "middle right," and "lower right."

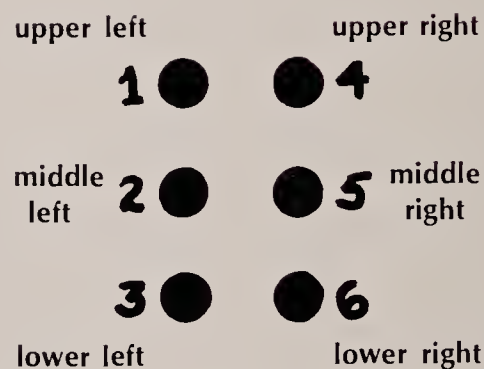


Diagram 5.

Part A. Horizontal Relativity.

Write a braille "C" (dots 1 and 4) on the cell, and ask the student to describe the position of dot 4 relative to dot 1, and vice versa, using the following terms: "directly to the right," "directly to the left."

Part B. Vertical Relativity.

Write a braille "B" (dots 1 and 2) on the cell, and ask the student to describe the position of dot 1 relative to dot 2, and vice versa, using the following terms: "directly above," "directly below."

Part C. Practice.

Write other combinations of two pegs and ask for the same definitions, using only horizontal and vertical directions. Have the student trace with his finger the implied line between each combination of dots, drawing in both directions, and identifying the line as either horizontal or vertical.

Lesson 2. Two Dimensional Relativity.

Part A. Demonstration.

Make a combination of two dots such as the braille "E" (dots 1 and 5) on the cell and ask the following questions:

"Is this dot (5) below this one (1)?" (Yes.)

"Is this dot (5) *directly* below this one (1)?" (No.)

"Is this dot (5) to the right of this one (1)?" (Yes.)

"Is this dot (5) *directly* to the right of this one (1)?" (No.)

And arrive at the following conclusion: "Then, this dot (5) is both below and to the right of this dot (1), but it is neither directly below, nor directly to the right of dot 1." Emphasize that in this case, it is necessary to make *two* statements of relative position in order to correctly define the position of dot 5. There are now two dimensions in use.

Part B. Practice.

Repeat Part A with other combinations of dots, such as (2,4), (3,5) and (6,2).

Lesson 3. Diagonal Lines.

Part A. Two Separate Components.

With pegs in the "E" position (dots 1 and 5), have the student trace with his finger the implied lines, horizontal and vertical, which he knows, from dot 1 to dot 5 (see diagrams 6 and 7).

1. Draw a horizontal line from dot 1 to dot 2; draw a vertical line from dot 2 to dot 5, or

2. Draw a vertical line from dot 1 to dot 4; draw a horizontal line from dot 4 to dot 5.

Thus, it is illustrated that two separate routes, involving two directions, and two lines, are possible in moving from dot 1 to dot 5.

Part B. Combining Two Components.

Demonstrate the third possible route from dot 1 to dot 5, the diagonal single line, containing components of two directions (see diagram 8).

Part C. Practice.

Have the student practice Part B until he can explain the process and the reasoning involved in the transition. Repeat Part B with other diagonal combinations, such as (2,4), (2,6), and (3,5).

Place a peg at dot 2, the middle left position, and have the student follow these directions:

"I have placed a peg at dot 2, the middle left position. Put your peg:

Directly below dot 2." (dot 3)

Directly to the right of dot 2." (dot 5)

To the right and above dot 2." (dot 4)

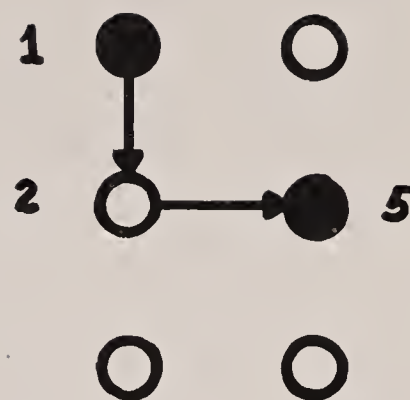


Diagram 6.

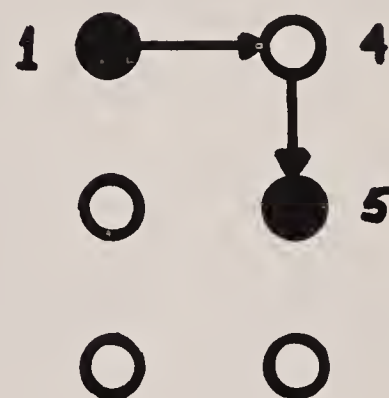


Diagram 7.

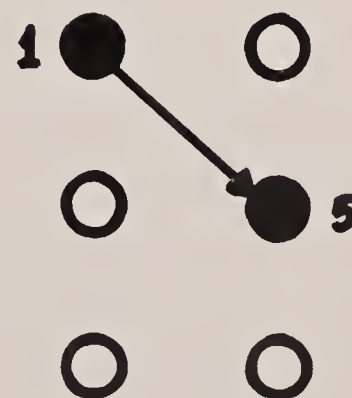


Diagram 8.

To the right and below dot 2." (dot 6)

The student should identify the implied line in each case as horizontal, vertical, or diagonal.

Move the stationary peg to dot 5, and repeat the instructions, substituting the word "left" for "right."

Lesson 4. Distance Factors.

Part A. Demonstration.

1. Place the stationary peg at dot 1. Give instructions: "Place your peg below and to the right of dot 1. Here the student has two choices, although he may not be immediately aware of it. Both dots 5 and 6 are correct choices for this question. Demonstrate that this is so, showing that dot 5 is one space down, while dot 6 is two spaces down, but both are below dot 1.

2. Have the student trace the implied line between dots 1 and 5, and identify this as a "short diagonal" (see diagram 9).

3. Have the student draw the implied line between dots 1 and 6, and identify this as a "long diagonal" (see diagram 10).

Part B. Practice.

Ask the student to identify and trace the following long diagonals: (1,6), (6,1), (3,4), (4,3).

Have the student identify and trace the following short diagonals: (1,5), (2,4), (2,6), (3,5), (4,2), (5,1), (5,3), (6,2).

Present the student with long and short diagonals at random, and ask him to identify them and trace them.

SECTION IV. FOLLOWING VERBAL INSTRUCTIONS.

Lesson 1. On the Model Cell.

The student should demonstrate an ability to follow verbal directions for placing the pegs in relative positions; to identify the type of line implied by any combination of two pegs as diagonal (long or short), vertical, or horizontal; and to trace the implied lines with his finger.

Lesson 2. On Paper.

The student is now ready to transfer his knowledge of lines, directions, and dimensions to paper, with the use of a pencil and a writing guide.

Part A. The Braille Cell as a Frame of Reference.

Encourage the student to imagine a braille cell on the paper where he is about to write. Give instructions for various types of lines, using the dots of the cell as points of reference. For example, say, "To make the letter 'L,' place your pencil at dot 1, draw a vertical line down through dot 2 to 3, then draw a horizontal line from dot 3 across to dot 6." For practice, have the student draw geometric shapes, rather than letters.

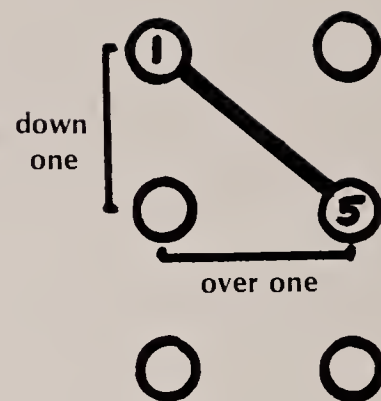


Diagram 9.

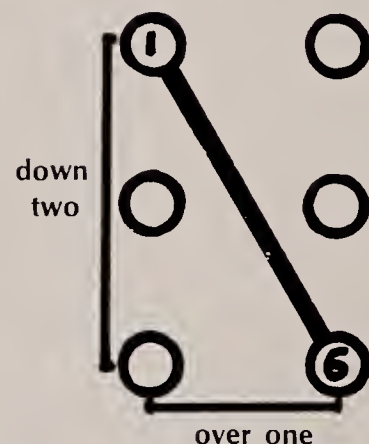


Diagram 10.

Part B. Omission of the Cell as a Frame of Reference.

Although Part A is important in making the transition from the model cell to pencil and paper, it is not practical in the long run to continue to use this method. Keep in mind that the knowledge of dimension and direction that the student has gained can be applied, through practice, to many other areas of functioning, such as mobility, map-reading, and general awareness of environment. But the world should not be thought of as being made up of braille cells, and the student should be encouraged to think of directional concepts on a large scale, and without dependence on a single frame of reference.

The next step, then, is to give directions for drawing figures and writing letters without using the braille cell designations. Begin with explicit instructions, as, "To make the letter 'L,' start at the upper left, draw vertically down to bottom left, then across to bottom right." Then be less specific, as, "To write the letter 'L,' start at the top, draw a line down, then to the right."

Part C. Application to the Alphabet.

Using the braille cell as a frame of reference when necessary, give verbal directions for the formation of block capital letters.

The letters E, F, H, I, K, L, N, X, and Z can easily be demonstrated within the cell (see diagram 11), while letters such as A, M, V, W, T, and Y are slightly more difficult to describe with only six dots as points of reference, since one point of reference needed for each of them is not present. If necessary, the cell can be expanded to include nine dots (three rows of three) to demonstrate these letters (see diagram 12). Letters such as K and R require short diagonals, while N, X, and Z require long diagonals (see diagram 13).

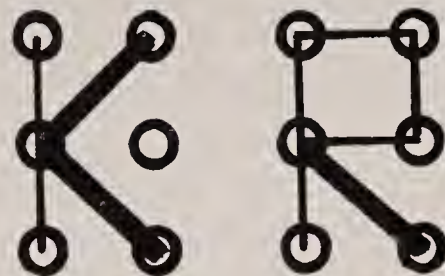


Diagram 11.

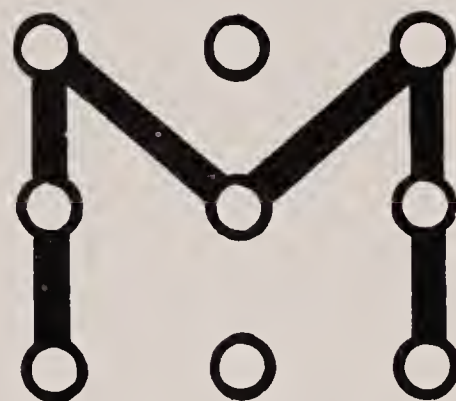


Diagram 12.

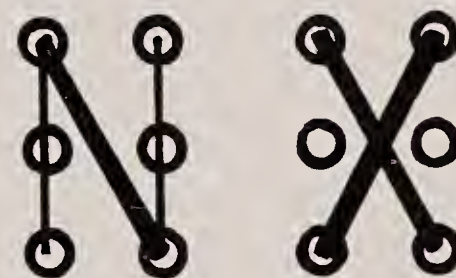


Diagram 13.

Ed. note: Because the above article may be of practical use as a teaching tool in schools and agencies for blind persons, reprints will be available after November 1. Up to five copies of the reprint will be free. Prices for larger numbers are as follows: 10 copies—\$2.00; 25 copies—\$3.75;—50 copies—\$6.50; 100 copies—\$12.00. Shipment will be facilitated if payment is received with the order.

Chaplain Service in a Voluntary Rehabilitation and Training Center for the Blind

The loss of vision involves and affects the entire person, not just his socio-economic life. It is, therefore, vitally important that the individual make psychological, economic, domestic, and social adjustments to his blindness. Most rehabilitation programs for the blind provide these services in one way or another. It is also important, however, that the individual be able to make a spiritual adjustment concerning the cause and duration of his blindness. The various areas of instruction and training seek to assist the individual in making those adjustments that will enable him to function to the maximum of his ability or desire; these areas of training and service, however, are not designed to deal with the individual's spiritual needs or adjustment. The body and the mind may be helped, but the soul or spiritual side, as a rule, remains untouched in the rehabilitation process.

Most, if not all, of the rehabilitation centers for the blind in this country (with the exception of Veterans Hospitals that have sections for rehabilitation of the blind, as for example the one in Hines, Illinois) do not offer the services of a qualified, full-time chaplain. Some centers do encourage their trainees to attend the church of their choice while in training in the community, but this is about the extent of the effort to provide spiritual or religious therapy to these individuals.

□ Arkansas Enterprises for the Blind, Little Rock, has pioneered in making the services of a full-time chaplain available to rehabilitation trainees. The Center's policy regarding the religious concerns of its trainees is set forth in its *Manual of Procedures and Policies* as follows, "As a part of social mobility training, trainees will be assisted by staff members when requested, to contact the church of their choice. While at the Center, observance of religious services at the church of one's choice is the sole responsibility of the trainee. Proselytizing or evangelistic services are not privileged at the Center. Ministers of choice are accorded visiting privileges with their communicants, but not for evangelistic activities."

Because the Center's policy regarding the religious concerns and the religious heterogeneity of the trainees excludes the duties usually thought to be those of a chaplain, in particular, preaching, conducting worship, evangelizing, and teaching religious doctrine, the term "chaplain" can best be defined in this context as a counselor and listener. Except for introductory interviews in which the trainees learn that the chaplain is a "pastor away from home," individuals are not scheduled for chaplain services as they are for other areas of training. The chaplain is available in the Center from noon through late evening, a period which includes both scheduled and leisure time for the trainees, and they are encouraged to contact him during this time at their own convenience. In some instances a trainee might be called to visit with the chaplain when such a conference might benefit him in his overall training program.

RICHARD T. LUDDEN

Mr. Ludden, a former Methodist minister, is chaplain and field representative of Arkansas Enterprises for the Blind, Little Rock.

Chaplain Service Pioneered in Arkansas

"Pastor away from home"

Many of the trainees are somewhat reluctant at first to seek a conference, but once they are assured that they are not going to be "preached at," most become more open and are able to talk quite freely. All conversations during interviews and conferences are kept confidential, except when the trainee's or some other person's physical welfare is in danger. This opportunity for give and take with the chaplain, without any part of the conversation appearing in a report, even seems to have some therapeutic value in the training program.

The chaplain in the Center is a part of the program of psycho-social services and, therefore, referrals are made to him by the social worker and the psychology staff and vice versa. Referrals from the residential dormitory supervisors and from the instructional staff are also made to the chaplain.

□ In addition to the "pastoral counseling service," the chaplain maintains a file of all religious groups within a reasonable distance from the Center and assists trainees in making their initial contact with the church or religious group of their choice. The chaplain will call the place of worship in the presence of the trainee, introduce him by name, home state, and religious affiliation, and make arrangements with the minister to secure transportation to and from services by some member of the congregation. Each trainee is given the name, address, and telephone number of the church and subsequent contacts with it are made by him on his own initiative.

It must be remembered that most of the trainees had regularly attended religious services, but had stopped doing so at the onset of blindness. Their lack of confidence in mingling with other people was often the reason. As this confidence is being restored through training and the individuals begin to want to re-enter the sighted community, contact with those who have similar religious beliefs is a logical point of contact. Some trainees, after first attending a church service in a strange physical environment, have reported a feeling of accomplishment and of encouragement. Once more they have been able to function and to perform the same activities that they did before the loss of vision; in short, they had begun to realize that they become functioning blind persons. This is indeed therapeutic rehabilitation adjustment.

□ Having the services of a chaplain in a voluntary rehabilitation adjustment center for the blind is a new idea and there is much to be learned from even the early stages of such an innovation. During the first year that a full-time chaplain was available at AEB, 248 trainees availed themselves of his services in 520 individual counseling sessions. There was an average daily trainee load of 80 in the Center program during this period. These trainees were from 27 states and two foreign countries. The entire trainee body is in residence at the Center for approximately four months.

Since the trainees accept the role of the chaplain as "a pastor away from home," the varied religious backgrounds of the trainees did not seem to be a factor in their taking advantage of the service. Similarly, the religious background of the chaplain apparently had no bearing on the decision of trainees to use the service. In fact, many of them have said, "May I call you my chaplain?"

Confidentiality is maintained

**Initial Contacts With Religious Groups
Are Made**

*Renewal of church attendance plays
role in rehabilitation*

Statistics

A final note

CAMA Board Operator: A New Employment Opportunity for Visually Handicapped Persons

Because the primary objective of any plan of vocational rehabilitation is suitable employment for the client, counselors involved in such plans must always be looking into jobs of various kinds and learning about the requirements and the potential opportunities for present and future clients. I recently learned of a new employment opportunity for visually handicapped persons that has come into existence as a result of the Bell Telephone System's customer-dialed, long distance calls. The position is a specialized telephone operator who records the number to which a customer-dialed call is to be billed. It is a part of the procedure known as Centralized Automatic Message Accounting (CAMA) which is used in the Operator Number Identification (ONI) system.

□ The CAMA board operator, wearing a telephone headset, sits at a special, desk-like switchboard position. On the desk top are located a 10-button key set (replacing the familiar dial) and two other special purpose keys. The operator is brought in on a toll call dialed by a caller with a "beep" sound on the headset. The caller is asked for his telephone number or the number to which the call is to be billed, and the CAMA operator records it by using the 10-button key set. Once the number is recorded, automatic switching equipment takes over and completes putting the call through. The special purpose keys include a position-disconnect (PD) key, for breaking the connection with a customer manually when it does not occur automatically, and a re-set key, operated when a dialing error is known before all seven digits are dialed and permitting the operator to redial the billing number completely.

Any area that has the ONI system for direct-dial, long distance calls will have CAMA board operators. Depending on the number of calls handled, there will be from two to 40 CAMA positions. The qualifications for such a position include the aptitude and ability of any clerical worker, the manual dexterity of a machine transcriber, a pleasing personality, the ability to get along with fellow workers, the ability to memorize the calling numbers immediately and to write them in some form (if a mistake made in keying the numbers is realized after the keying is completed, the correct information must be passed on in written form to the supervisor), and, of course, a willingness to carry one's share of the work. The training of CAMA board operators, taking about one week, is ably handled by Bell System personnel, although someone from the referring agency should learn the duties and be able to give instruction in the event that such aid is required.

□ The Bell Telephone System has shown a willingness to hire qualified visually handicapped applicants: there are such CAMA board operators in Min-

THOMAS H. STOUT, JR.

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Duties of the CAMA Board Operator

Qualifications

Further Information

neapolis, St. Paul, St. Louis, San Francisco, and Madison, Wisconsin. Anyone wishing more technical information concerning this position should contact their local Bell System company. Mrs. Betty Ann Colby, employment supervisor for the Madison District, has been instrumental in assisting the Wisconsin Bureau for the Blind in securing positions in this state. She has offered to talk with anyone who wishes further information. Mrs. Colby may be called at area code 608-257-1872. Her address is 122 West Mifflin, Madison, Wisconsin 53703.

Radio Talking Book Network in Minnesota

As a part of its rehabilitation effort for visually handicapped persons, the Minnesota State Services for the Blind has established the Radio Talking Book Network. This private radio service, broadcasting 17 hours a day on a special 67 kilocycle FM subcarrier frequency, endeavors to provide its listeners with access to current information from the community, information which the non-handicapped receive through daily newspapers and magazines.

□ The broadcast schedule of Radio Talking Book includes such regular features as a 7 a.m. show based on the morning newspaper; "Strictly Feminine," emphasizing women's personal needs and interests and presenting interviews, discussions, and feature articles from women's magazines; "For Men and Some Women," featuring more rugged stories and novels; "Commentary," a 5 p.m. show including readings from the leading national news magazines, publications of and for the blind, and interviews with individuals in work for the handicapped and with handicapped persons themselves; "P.M. Report," dealing in depth with the major issues of the day; and other broadcasts presenting histories, novels, short stories, children's shows, shows for teenagers, and an occasional potpourri of magazine articles. The planning and presentation of programs is carried out by a small staff and more than 85 carefully selected volunteers.

Radio Talking Book can only be received on a special kind of radio (not on a regular AM-FM set) which is loaned to any visually or physically handicapped person who is eligible. The FM transmitters are owned and operated by Minnesota Educational Radio, Inc., which is licensed by the Federal Communications Commission to grant use of its subcarrier capability. The Minnesota State Services for the Blind purchased the necessary equipment for subcarrier transmission and equipped studios at its Communications Center in St. Paul and at St. John's University in Collegeville, Min-

Programming

Special receiver is needed

nesota. The listening area of Radio Talking Book is about 100 by 200 miles around the transmitters, which are located in St. Paul and St. Cloud. Several TV-FM cable systems carry the broadcasts to other parts of the state. As additional transmitter facilities are installed, the Radio Talking Book will extend its broadcast range to most areas of Minnesota and increase its number of listeners to 5,000. Extension of the service, however, will not be allowed to compromise the nature of the Radio Talking Book as a Minnesota-based service intended for Minnesota listeners. It is, after all, the local nature of the service that allows it to meet the immediate needs of its listeners.

☐ Funding for the Radio Talking Book comes from a variety of sources. The Hamm Foundation of St. Paul makes a major contribution toward its support. An innovation grant (for setting up a new rehabilitation service) was awarded to Radio Talking Book by the Rehabilitation Services Administration, U.S. Department of Health, Education, and Welfare. In addition, aid is provided by the Rochester (Minnesota) Foundation and other public and private groups.

Funding

☐ Questions about setting up a service like the Radio Talking Book Network in other states, including costs, programming, equipment, regulations, and staff and volunteer selection, may be addressed to the Communications Center, State Services for the Blind, 1745 University Avenue, St. Paul, Minnesota 55104.

Information Is Available

A "Headstart" Program for Pre-School Blind Children

For many years educators have recognized and emphasized the advantages of early educational training. Nursery schools, kindergartens, and headstart programs have been designed to meet the needs of most young children, but programs to promote the social and mobility orientation and independent functioning of young blind children are only recently being planned. Staff of the Columbus, Ohio, public school system have begun efforts in this direction.

☐ Title VI funds were used to organize two half-day groups of pre-school visually handicapped children. The usual nursery school activities were planned with special emphasis on motor development and body movement. The developmental level of the morning group was between six months and three years; most of the children had no verbal communication skills.

Two Groups Organized

The afternoon group ranged in developmental level from three years to six years. Parents were involved in the project both through visits and teacher-parent conferences. Each child was given a psychological examination by the school psychologist prior to placement and the teacher prepared individual evaluations on a periodic basis.

Pauline Alexander, school psychologist, and Virginia Gullion, supervisor of the visually handicapped program, write, "Experience indicates that proper grouping of children is necessary for success of the program. The teacher used activity ideas from neighboring nursery schools and headstart programs. A positive attitude toward the school environment was stressed. While flexibility is necessary, it was found that the routine of a planned daily schedule is extremely helpful to young blind children. One of the measures of growth was the gradual ability of the children in the group to interrelate and share as opposed to their earlier self-centered activities."

□ They go on to say that the problems experienced by those in the evaluation of the headstart programs apply equally well to this pre-school program. Changed behavior and improved adjustment cannot be measured entirely on a short-term evaluation. Questions may be raised regarding the advisability of grouping visually handicapped children together at pre-kindergarten age, but most of these children would be unable to adjust to a regular pre-school or kindergarten program in the neighborhood. "It is possible that through further experience and study we will find that early grouping of this kind will diminish the need for self-contained classes for visually handicapped children later in the elementary grades."

Grouping May Be Advantageous

Architecture for Blind Persons

Architecture exists only because man exists. This means that the ultimate goal of architecture is to create an environment which will provide as much satisfaction as possible to the many needs of every human being. In order to be successful, therefore, architecture must satisfy not only individual needs, but social ones as well, for man is both an individual and a social being.

The ultimate goal of architecture for the blind can in no way differ from the goals of architecture for anyone else. The true architect must simply learn to satisfy the individual and social needs of a particular kind of client: people who cannot see, but who in no other way differ from those who can see.

□ As an individual, the blind person lacks a very important sensor, one through which sighted individuals receive about 87 percent of their overall raw sensory information.¹ The remaining 13 percent is, to the sighted person, the total sensory input that the blind individual receives. Environmentally, this discrepancy creates certain definite problems which the architect must try to solve. The visual environment, which is extremely important to sighted individuals, means nothing or nearly nothing to blind ones.² Conversely, the aural, olfactory, and tactile environments, which mean little to the sighted, mean *everything* to the blind.

As a result, the architect who commonly deals with the design of environments for the sighted will have to face a complete reversal of priorities if he is to design successfully for the blind. This indeed constitutes a major problem for architects who usually deal only in visual terms. In this fashion, the definition of architecture given by the great master Le Corbusier, of reducing architecture to the "mere play of volumes in the light,"³ means absolutely nothing to an architect designing for the blind. If he wants to be honest with himself and with his client, the architect will have to redefine architecture in non-visual terms. This is extremely difficult, if not impossible, for someone who is not blind.

For this reason, the architect confronted with such a problem must rely on information conveyed to him by blind persons; his solution to the problem, therefore, must reflect the recommendations given to him by the blind, for ultimately they are the only ones to judge the success or failure of the designed environment.

This new environment must convey information using channels of perception other than the eyes. Logically, each of the other remaining sensory mechanisms must be considered and studied in detail, for each one of them will provide overlapping clues to the solution of that difficult puzzle, the perception of space.

A blind person cannot *see* the shape of a room, the color of the walls, or

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The Environment and the Blind

Redefining architecture

Using the other senses

the pattern of the floor. He can, however, certainly hear the sound of the space; he can feel the texture of the walls, the hardness of the floor, the temperature and humidity of the room, and even the velocity and the smell of air. He senses space differently and so his concept of space will be different from the sighted person's.

□ In order to facilitate the blind person's comprehension of space, the architect can and should modify those non-visual parameters that are seldom considered by most architects. He may, for instance, consciously alter the acoustical character of different spaces, "tuning," as it were, each one of them to fit specific usages. Private spaces, such as those used for sleeping and resting, can be sound-absorbent and mellow; while public spaces, for eating and playing, can be highly reflective and brilliant. The architect can achieve these effects either by changing the size, proportions, and shape of space; or by changing the textural qualities of the surfaces of that space or even the sound absorption quality of the floor covering. He can enhance the experiencing of spaces by facilitating spatial orientation; for example, slight variations of levels can be introduced by means of small ramps to connect different spaces or to act as transitions from one space into another. Even the temperature levels of adjacent spaces or the velocity of the air circulating in them can be altered or varied slightly.

In fact, the architect could design an artificial environment so completely tailored to the sensory needs of the blind that it could easily be labeled as highly "protective" or even "motherly." The question remains whether or not such an environment would be desirable.

As noted at the outset, the needs of people are both individual and social; but these needs are constantly changing as the individual continues to grow from early childhood all the way through maturity. Regardless of how many people achieve real maturity and regardless of what real maturity is, the fact remains that it is our duty to try at least to facilitate this ongoing process of change and growth. And this applies, of course, whether we are designing for sighted or blind persons.

□ It would be easy to have such a "motherly" environment accepted by clients and by the general public. Such a protective environment, on the contrary, is not an unmixed blessing, however tempting it may sound. Clearly, individuals immersed in one of these environmental paradises can be swallowed up by it and will find it difficult to gather the necessary strength and courage to face the difficult realities of the outside world. Who has not seen individuals who will always remain children because they refuse or are unable to leave the comforting womb of a protective social or physical environment? Psychologists tell us that this is *not* what healthy individuals want, or what they should want. Blind individuals decidedly add that this is not what they desire.⁴

We have stated above the need for the architect to consult the people of any group for whom he is designing. Such a consultation is urgently needed when designing for the blind. Obviously the mature architect cannot rely on his own experiences when designing for the blind, for being sighted, he

Some Possibilities for Change

Environmental desirability

The Dangers of a Protective Environment

Group goals

lacks the kind of experiences that the blind have. He has, therefore, to rely on information made available to him by members of the group. It is up to them to tell the architect whatever it is they want to achieve as a group. *The group always sets the goals. The architect simply tries to achieve them.* Clearly their goals include membership in sighted society. Blind persons are fully capable of playing important roles in any human society. They are individuals, handicapped perhaps, but still capable of achieving true maturity.

Should the architect then reverse his design concept? Should he then, perhaps, design a very "hostile" environment; an environment so negative and difficult to cope with that, when the blind individual encounters the sighted environment, he will find it easier to manage? Would such a hostile environment encourage him to adapt to sighted society? Will it ease this difficult transition?

If the goal to be achieved is the integration of the blind minority into the sighted majority, then the designer can propose a "developmental sequence of environments," rather than a single one that is either protective or hostile. In this way, the environment (social as well as physical) could be protective when it has to be protective (for young children or for the recent adventitiously blind), and could progressively change to introduce the individual thereby into more and more difficult-to-cope-with environments. Hopefully, the final stage of such a developmental sequence would be the kind of physical environment that the sighted would accept as normal.

□ Is there anything the architect can do to alleviate this difficult transition further? There certainly is. And what is incredible is that even though it is extremely simple, little has ever been done. It has been noted already that most of the raw information about space for sighted individuals is received through the eyes, through visual clues, and that only the small amount of information remaining is non-visual. It is easy to understand then why architects, who are always sighted, ignore non-visual clues in the environment: they are not really needed by the sighted. Those non-visual clues do provide supplementary information, but rarely do they convey information which has not previously been conveyed by visual clues. Sighted individuals can *see* the size, shape, and form of a space. They can see textures before they touch the surfaces. And, in fact, they will only rarely touch the surface to confirm its spatial character.

This does not mean, of course, that non-visual clues are not there. They are, and they should be exploited carefully. The true architect will alter them slightly and in such a way that will make little or no difference to his visual friends, but which can make all the difference to his blind ones.

The sighted individual will pay little attention to a small ramp leading into a space; or to the transition from a soft floor to a hard one; or from a brilliant room with hard surfaces to a mellow one with soft wall coverings; or from a warm room to another slightly cooler. And he will pay little attention to these details because that is all they are to him: details. But these clues are not details to a blind individual. These clues *are* the space itself. They provide the only way blind persons can perceive space and become oriented to it.

A "hostile" environment

A "developmental sequence of environments"

Emphasis on the Non-Visual

"Details" can be important

"Sighted" architecture could, then, undergo several changes in order to incorporate and consciously exploit all of these non-visual clues into environments. In this way, the environment would not only be more richly satisfying to the sighted, but would provide the means for the blind to enjoy it and to be satisfied by it as well.

□ Would such innovations affect architecture? Indeed they would. And hopefully, for the better. The architecture of visual terms reflected in Le Corbusier's easy formula would remain; but it would be enhanced by the more difficult architecture of non-visual terms. In this way, architecture for the blind would be discernible *by* blind individuals wherever they go. Spaces would become richer and more truly beautiful because they would be doing the job that they are supposed to do: satisfying the human needs of *all* people, not just the sighted.

The Effect on Architecture

1. "Because those of us who see gain 87% of our perceptions through sight, blindness is one of the most feared of physical handicaps." *Annual Report of the President of the American Foundation for the Blind, Inc.*, 1948.

2. The adventitiously blind retain, to some degree, visual memory of spatial images and experiences if blinded after the age of three years, thus facilitating their comprehension of space. These images tend to fade and to be forgotten with time.

3. "L'architecture est le jeu savant, correct et magnifique des volumes assemblés sous la lumière." See Charles-Edouard Jeanneret [Le Corbusier], *Vers une Architecture*, (Paris: Crès, 1923).

4. "A newly blind girl on a visit to The Lighthouse directly from leaving the hospital provides an illustration:

'... Here was the safe, segregated world of the sightless—a completely different world, I was assured by the social worker, from the one I had just left. . . .

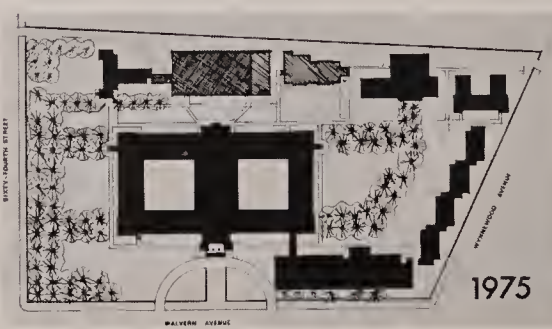
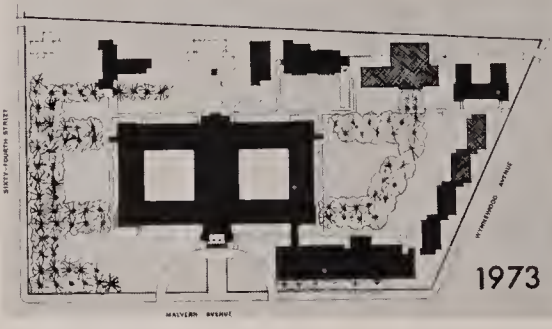
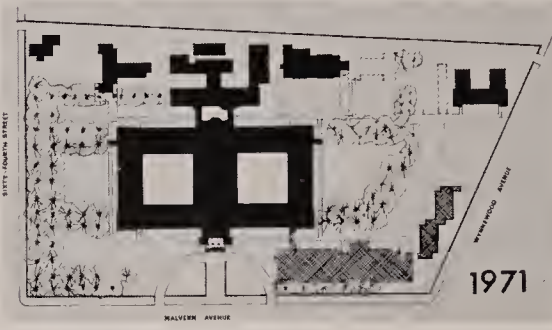
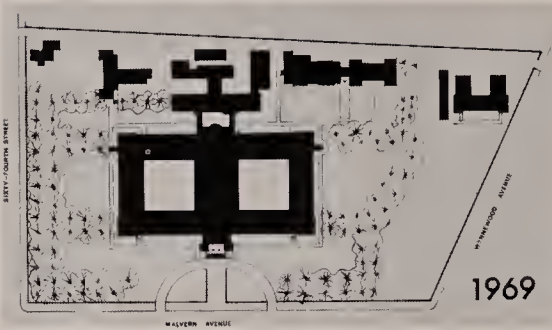
I was to spend the rest of my life making mops with other blind people, eating with other blind people, dancing with other blind people. I became nauseated with fear, as the picture grew in my mind. Never had I come upon such destructive segregation.' "

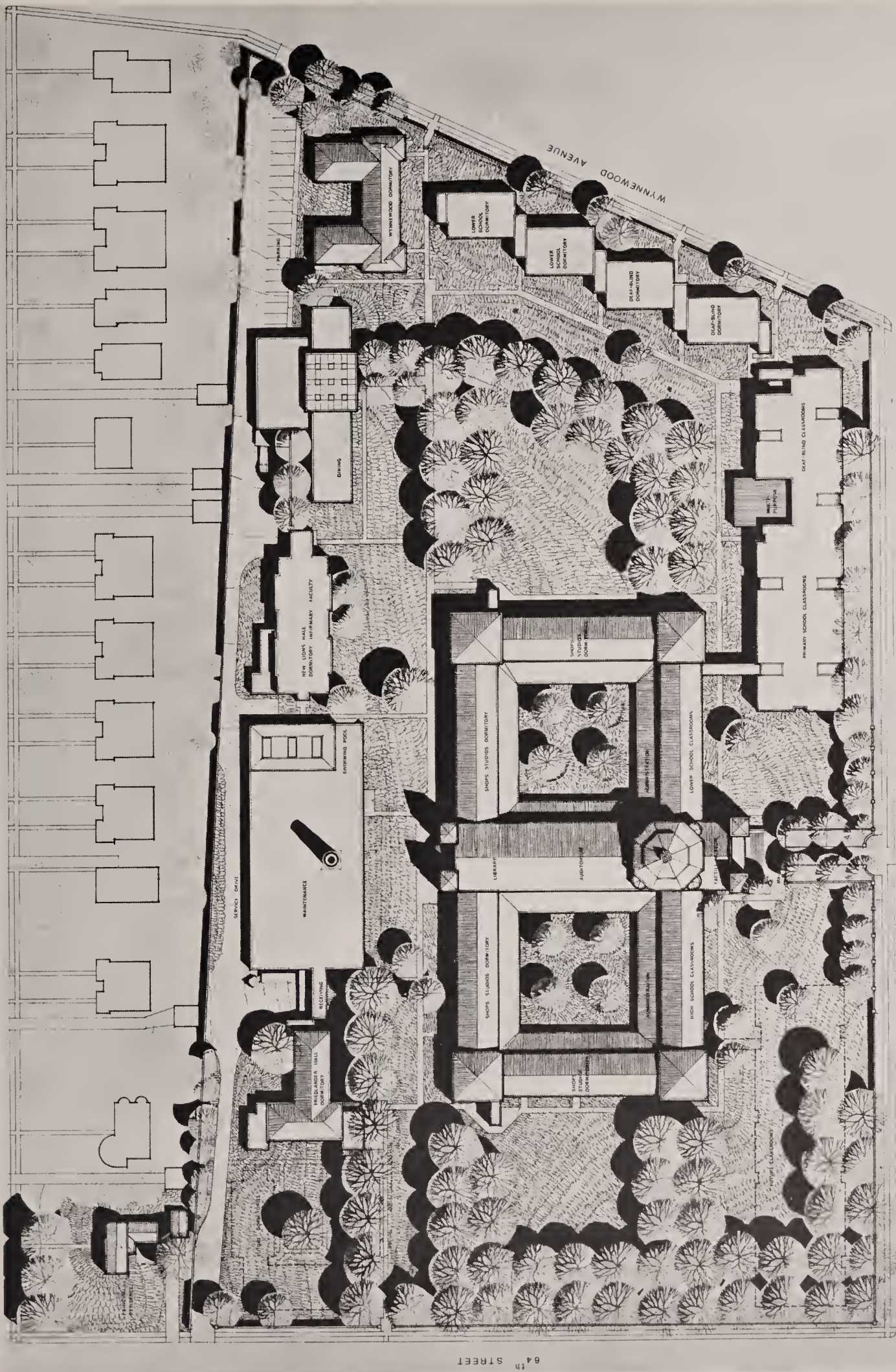
T. Keitlen (with N. Lobsenz), *Farewell to Fear* (New York: Avon, 1962), pp. 37-38; as cited by Ervin Goffman, *Stigma* (New Jersey: Prentice-Hall, Inc., 1963), p. 37.

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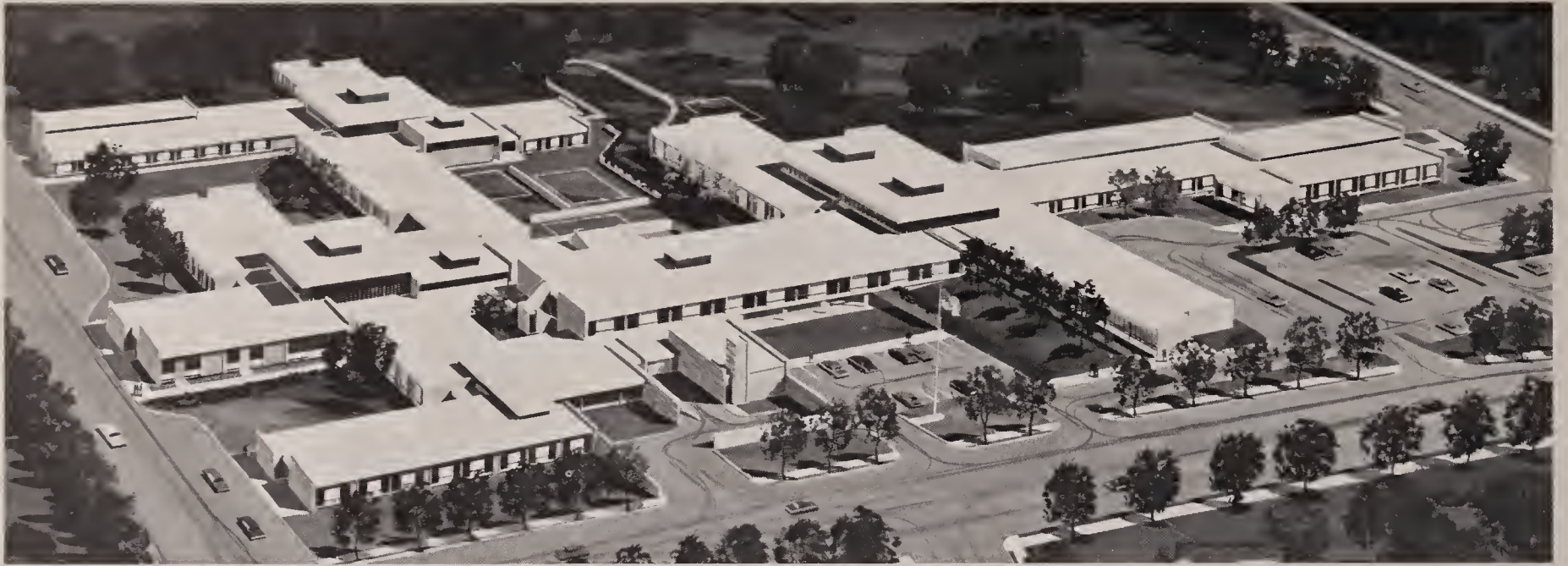
Construction in Progress at Three Schools for the Handicapped

The 1969-1975 master plan for the Overbrook School for the Blind, in suburban Philadelphia, was developed by Francis, Cauffman, Wilkinson & Pepper, Philadelphia architects, to assist the school in programming and locating the new buildings foreseeable within the timespan and to investigate the expansion potential of the property after 1975. The phasing of new construction (right) is planned so that all vital functions of the school will continue as the work progresses. The major concept of the plan (facing page) was to utilize and exploit the existing major resources of the campus, namely, the magnificent main building (below) and the verdant grounds which surround it.





MASTER PLAN 1969-1975 OVERBROOK SCHOOL FOR THE BLIND FRANCIS CAUFFMAN WILKINSON AND PEPPER ARCHITECTS AND PLANNERS



Above, an artist's rendering of the new Special Services School for Exceptional Children now under construction in North Bellmore, Nassau County (Long Island), New York. The 1,200-pupil, multi-winged structure, combining three separate but interrelated schools in a single complex, is the first of its type anywhere having complete educational, professional, and recreational facilities in each school unit.

Below, a view of the architectural details of the main entrance facade of the Special Services School. The higher-roofed structure, right, shows clerestory portion of the all-purpose room, one of three similar facilities within the complex. The multi-winged structure was designed in small interconnected units, with a harmonious combination of varied heights and materials to give it human scale and to relate it to the surrounding residential community. The \$4,862,000 complex was designed by Frederic P. Wiedersum Associates, Architect-Engineers, Valley Stream, New York, and Trenton, New Jersey.





Above, the new North Building at the Perkins School for the Blind, in suburban Boston, just completed this fall. It houses the school's Teacher-Training Department and includes classrooms for deaf-blind children, an acoustic laboratory, a large area for home economics for the entire school, and an auditorium. At left, the Northeast Building, completed last February, contains housing for the parents of deaf-blind children during the week-long evaluation process and, in the far Tower, for teachers in training.

According to Dr. Edward J. Waterhouse, director of Perkins, the architect, Edward Diehl, Associates, of Cambridge, Massachusetts, was asked not to include any special features because blind and deaf-blind children would be using these buildings. The philosophy on which the entire Perkins campus has been built is that these children will be occupying buildings without special features after leaving school and should not be housed in anything which might be considered specially protected.

Establishing Special Education Programs in Developing Countries

A century and a half ago educators in Europe and the United States struggling with philosophical and practical problems of such enormity that it would seem to have been a miracle that anyone was concerned about children with exceptional needs. Yet at that time schools for the blind and for the deaf, and programs for other kinds of handicapped children grew.

Today many developing countries have great problems in general education: the low percentage of citizens who receive the basic four to eight years of schooling, the number of unqualified teachers pressed into service, the crowded schools with minimal equipment. Yet special education in many forms is growing.

A few schools for deaf or blind children have existed for a number of years. Some were started by religious organizations, some by philanthropic persons during the period of colonization, and others were formed by local citizens or foreign residents with personal interests in a particular handicap. Once developed, such schools have occasionally been successful in obtaining partial support from the government, but rarely has the government of an emerging country fostered the development of special education on its own initiative.

In the last ten years assistance from developed countries has contributed to more rapid growth of special education. Much of the aid has been unwisely given and often small, if any, benefit has accrued from the investment. From these failures, as well as from the successes, has come some useful knowledge of equal value to the emerging countries and to the sources of outside aid.

□ Of prime importance is the fact that special education must develop under the governmental wing in order that standards may be set and maintained, and the programs may be continued. No matter how great the assistance from outside sources, commitments from the government of the country concerned are necessary for the acceptance of new programs and for their future expansion. Even so-called pilot programs whose purpose is to ascertain or demonstrate their value should be initiated only with governmental approval and at least partial financial support. Success then becomes "our success" rather than just another foreign project operating within the country.

□ Consultants sent by international organizations or by individual developed countries into emerging countries should be of the highest caliber. They will be required to learn rapidly a great deal about another culture, to accept concepts new to themselves about child rearing and education, to exert high creativity in adapting foreign ideas and techniques to a strange culture, and to make use of local talent and local facilities in developing appropriate materials and equipment. The good consultant investigates the patterns of thinking and learning within a particular country and begins his work where his ideas can be accepted and incorporated into the present system. This requires time. As-

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Involvement of Governments

Quality of Foreign Technical Assistance Personnel

signments to an emerging country should normally be of two to three years duration if they are to have lasting value.

Unfortunately, a very high percentage of the consultants sent to developing countries are on short term assignments and are not well qualified to work in different cultures.

Too often the consultant, under pressure of time with a lack of training for service in other countries and poor personal skills, attempts to reproduce in miniature form the special education programs he knew at home, without regard for local conditions. He imports enough expensive equipment for his pilot project, he trains a few people to parrot his words, and he fights with frustration any deviation from his preconceived concept of his program. One can easily understand why his departure for home is often happily celebrated and his work thereafter quickly dismantled.

It cannot be too strongly stressed that consultants must be excellent. Governments of emerging countries are learning to check carefully the credentials of potential consultants offered by outside sources.

□ It is as true in emerging countries as in developed countries that those patterns for programs in special education which are first introduced usually become the standards for future programs. For example, the first school for handicapped children in one small Southeast Asia country opened its doors to both deaf and blind children. The dual school for the deaf and the blind was a pattern used frequently in Europe and the United States in the last century but has been abandoned in this century. Yet the well intentioned European who began services for the handicapped in an Asian nation not too many years ago introduced this archaic pattern now no longer used in his own part of the world.

Within a short time six more dual schools developed. It would have been a simple matter to have separated the education of the deaf from the education of the blind and to have created schools each of which would serve one or the other handicap, but the pattern of the dual school had been established and was slavishly followed.

Another country was taught by a foreign consultant that integration of blind children with the sighted was a good thing but only at secondary school level. A unique plan for bringing the blind adolescents together into boarding houses in order to integrate them into a few chosen schools for the sighted was created. It was not recognized that taking the young people out of their homes and putting them into barren boarding houses removed important advantages of both the integrated system whereby handicapped youth remain with their families and the special school system whereby substitute family living is provided.

Today this country stands alone in the world as the promoter of small boarding houses for blind adolescents. No amount of additional consultation has been able to change the opinions of the governmental officials that this is the best way to handle blind youth in secondary schools. A pattern had been set!

While it is possible and worthwhile to bring a variety of patterns for special education programs to developing nations, it is important to recognize that the most vital ones will be the first ones, for they will serve as guides for the future.

Local conditions must be considered

Importance of Initial Patterns

Boarding houses promoted

In addition to consultants, outside sources of aid frequently offer: training programs within the emerging country, training courses in developed countries, scholarships for individuals to study overseas, volunteer services, gifts of equipment, or money to purchase equipment.

Often one part of a consultant's responsibility is to provide training courses within the country or region where he works. If he is an educator with enormous drive, extensive experience and knowledge, and excellent interpersonal skills, he may offer the courses himself. Many times he will attempt to broaden the scope of the courses by inviting local people to participate as guest lecturers. Both paths contain stumbling blocks. Few consultants are well enough qualified to handle entire training programs alone, while too much local participation may keep the level of discussion at the present status of the country without moving the program forward as the consultant intends. While training programs are necessary, they should be provided with adequate staff, drawing upon as many outside talents as are necessary to assure the appropriate level of instruction. Local persons should be used but largely for the purpose of giving them more insight into what is being offered in the program.

Several courses have been given in developed countries specifically for representatives of emerging nations. The pride in such courses is the opportunity to show concretely how special education can be handled effectively. Of course, to help the participants understand the role of special education within a particular country, one must give them much information about the history of the country, the governmental structure, the general education system, and the cultural patterns of the host country. A large, and unwarranted assumption is that the participants of such a course will be capable of understanding all that is told them and of realizing how special education could fit into the structures of their own countries. This happens all too rarely.

Usually the participant makes a written and an oral report upon his return home. Often he then returns to his old job and carries on as though he had not been away. Occasionally, the participant, having acquired a little status by studying overseas, is promoted to some other job totally unrelated to his specialized field of overseas study.

To invest in the training of an individual educator overseas can be equally fruitless unless he is tied to an ongoing program within his own country where his new knowledge may be put speedily to use. Many now believe that individual scholarship programs have proved to be the least beneficial of the aid programs in the field of special education.

A popular means of assistance to other countries is through organized volunteer programs. Under the supervision of their own governments or national organizations volunteers of various ages work in a variety of jobs in developing countries. Often they serve in the field of education. Most of those working in special education have never had previous training in that field. Although their work has sometimes been valuable, at other times their activities have done more harm than good. It is not always true that something is better than nothing! International organizations sending volunteers to work in special education should be more careful about their prior training and on-the-job supervision.

Volunteer programs are popular

Outside assistance often comes in the form of equipment or money allocated for equipment. Frequently the equipment is not chosen specifically to meet a known need of a certain country. One small country received \$20,000 worth of educational equipment for the 71 blind children being educated within its borders. Ninety percent of it was inappropriate because of the climate, the culture, the limited knowledge of the teachers, and the general education system.

When money is offered, the officials of the recipient countries usually have a difficult time knowing which of the items in the many catalogs would be of greatest value, since they themselves, as well as the educators, may have little knowledge of their use. Donations of equipment, or money for equipment, should be accompanied with information and guidance as well as good will!

□ Many of the documents developed by the United Nations concerning the rights of all individuals within a society and the means of achieving steps toward worthwhile human goals have been taken literally by many emerging nations. There is growing recognition now of the rights of all citizens and because of this, there is a greater willingness to expand educational and vocational opportunities to include handicapped persons. There is more readiness on the part of most governments to listen to ideas about helping the handicapped and even eagerness to include new programs within the existing framework.

As programs of education and rehabilitation for the blind, the deaf, and the physically handicapped demonstrate their worth, interest generally grows in the more difficult areas of mental retardation and emotional disturbance. Developed countries have a strong responsibility to provide only professionally sound advice when they are asked for assistance or they shall be blamed for poor or failing programs.

□ Whether through country to country agreement or under the auspices of international organizations, a good program of assistance in special education should include at least the following points:

- 1) Agreement of the government with regard to present and future responsibilities, with particular attention to the matter of personnel assigned to pilot and continuing programs, as well as a certain amount of financial investment;
- 2) Adequate consultative service over a reasonable amount of time;
- 3) Extensive training courses within the country itself;
- 4) Enough equipment and materials, procured or developed locally whenever possible;
- 5) A variety of educational patterns to serve children with differing special needs under differing local conditions;
- 6) Carefully organized surveys to find the children who have special needs;
- 7) A formal procedure for evaluating children in order to determine eligibility for admission to present programs where they exist and the need for creating other types of services in accordance with the requirements of the children who have been located;
- 8) A plan of action for the introduction, continuance, and improvement of the new programs, including later expansion.

Interest in Special Education

A Good Program of Assistance

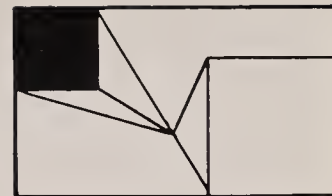
☐ A few developing countries have moved forward after receiving only limited outside assistance at the outset. In some cases special education programs which have now been operating for a few years are better than the original ones the foreign expert initiated. Such strength indicates that creative leaders have been wiser than their advisors. By avoiding some of the gross errors made in special education in developed countries, some emerging nations have progressed to the point that they now have knowledge to offer the rest of the world including the developed countries!

☐ Plans for the development of special education in emerging countries must include the difficult but necessary steps for maintaining the programs. It is far easier to establish special education services than it is to maintain them. There is no point in opening programs which will collapse once the early enthusiasm, the original staff, and the initial funds have disappeared. Hence, it should be stated firmly that establishing and maintaining special education services are not separate considerations but merely two aspects of the same problem: the development of special services to individuals who have unusual needs because of physical, mental, or emotional differences.

Independent Action

Maintaining Special Education Programs

Letter to the Editor



Dear Editor:

The American public, including interested laymen and concerned professionals, has I am sure tended to look on publications of the American Foundation for the Blind as authoritative and, for the most part, constructive.* It is difficult, however, to accept the article by Donald Schon (*New Outlook*, June 1970) as either authoritative or constructive. As the editorial note on page 169 states, the article is based on a year-long NINDB-sponsored study, but we are puzzled why one with credentials we assume Dr. Schon has would permit it to be published in this form with its lack of documentation and innumerable discrepancies, which can only raise doubts about the data and conclusions. Only a few examples need to be cited here:

1. On pages 170-171, Schon indicts the inadequacy of statistics in the field with respect to (a) the number of blind persons in the United States and (b) the number of blind persons served by agencies. What figures does he then use for his statement (page 172) that only 20 percent of the blind population is actually being served today? What figures does he use for the statement (footnote 5) that to meet the needs of all blind Americans, 118,000 employees would be needed and (page 174) an outlay of \$1 billion?

2. How did he determine the goals of "the blindness system" (page 173)? Was this done through reading, hearsay, interviews, or questionnaires? If the latter, how many people were interviewed and what kind of "instrument" did he use? Without this information, the reader must simply accept Schon's statement about these goals. These are but a few of his rather frustrating inadequacies which

appear to be cloaked in the authority of our only national consultative agency.

Even more confusing (to one who is associated with the field of mobility) is Schon's reference to Richard Hoover as an "outsider" (page 176). Hoover was unquestionably the innovator of the long cane technique, who, according to Schon, was "merely a physical education instructor." But Hoover's four years as a teacher of mathematics and physics (as well as physical education) at the Maryland School for the Blind and his involvement in the School's cottage-family plan make it impossible to relegate him to the rank of "outsider" (or is Schon indirectly belittling "insiders" and teachers of physical education?).

Schon further implies that Hoover did not really become an "insider" in the system "until after he became an ophthalmologist." It is to Dr. Hoover's everlasting credit that he remains a potent force for innovation and good (not necessarily synonymous terms, as Schon admits on page 177), in "the system." Unfortunately, many other ophthalmologists are unwilling or unable to assume their crucial roles as members of "the blindness system," thus creating a gap in rehabilitation processes which Dr. Schon apparently did not have opportunity to investigate.

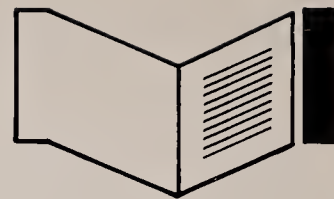
Dr. Hoover himself, if he had encountered Dr. Schon, quite likely would have protested that the long cane system was not really "the only important technical innovation in travel for the blind in this century" (page 176). Systematic breeding and training of guide dogs and systematic procedures for teaching blind persons to use such dogs were introduced in Germany after World War I. Dorothy Harrison Eustis, at the behest of a blind

American (Morris S. Frank), adapted the German techniques through her own experience in dog breeding and training, a process that resulted in the establishment of The Seeing Eye and the first systematic mobility program for blind persons in America in 1929, sixteen years before the long cane. At the time, Mrs. Eustis was a bona fide "outsider," but with the help of Seeing Eye associates like Mary Dranga Campbell, she did not remain one for long.

The serious lack of documentation and certain notable omissions lead the reader to suspect the accuracy of many other statements that appear throughout Dr. Schon's article and to question the validity of his conclusions. How to retain the best of the past inherent in "dynamic conservatism" (page 179) before tossing it all out in favor of change for the sake of change alone is, in the long run, a problem facing society as a whole, not just the blindness sector. Team approaches to our problems are less apt to be achieved in the atmosphere of divisive, hypercritical polarization which articles like Dr. Schon's tend to generate.

George Werntz, Jr.
The Seeing Eye, Inc.

**The editors of the New Outlook for the Blind would like to point out that it is not the intention of the publisher to have this journal represent only the views of the American Foundation for the Blind. As is stated each month in the masthead of the magazine (inside front cover), "The New Outlook is . . . an impartial forum for all views. Opinions expressed in signed articles are not necessarily those of the publisher."*



Special Problems, Special Solutions; Handbook for Teachers of the Visually Handicapped. Atlanta, Georgia: Georgia Department of Education, Division of Special Education and Pupil Personnel Services, 1969. 47p. (Address requests to the publisher, State Office Building, Atlanta, Georgia 30334.) Illustrated handbook prepared to answer questions which arise each year concerning educational programs and services for visually handicapped children in Georgia.

Guiding the Development of the Young Visually Handicapped; a Selected List of Activities, by Doris Groves and Carolyn Griffith. Columbus, Ohio: Ohio State Department of Education, rev. ed., August 1969. iv + 43 p. (Address requests to State School for the Blind, 5220 North High Street, Columbus, Ohio 43214.) Booklet designed for parents, teachers, social workers and others interested in the development of the visually handicapped child.

The Visually Impaired Child; Growth, Learning, Development; Infancy to School Age, by Carol Halliday. Louisville, Kentucky: Instructional Materials Reference Center for Visually Handicapped Children, March 1970. 87p. (Address requests to the publisher, care of the American Printing House for the Blind, 1839 Frankfort Avenue, Louisville, Kentucky 40206.) This is a booklet for teachers and parents of blind and partially sighted pre-schoolers. In addition to the text, it contains a five-page directory of sources of materials and services as well as an eight-page bibliography.

Disability in Antiquity, by Fareed Haj. Philosophical Library (15 East 40th Street, New York, New York 10016), 1970.

188p. \$6.50. A study of the causes of disability in the Near East during the Middle Ages. As blindness was the most common handicap, the book contains much material relating to causes of blindness and attitudes toward blindness.

Exceptional Children in a Modern Society, by Harold D. Love. 2nd ed. Dubuque, Iowa: Kendall/Hunt Publishing Company (Available from William C. Brown Book Co., 135 South Locust Street, Dubuque, Iowa 52001), 1969. 184p. \$5.50. Chapter IV (pp. 51-72) is entitled "The Blind and Partially Sighted."

Out of the Shadows, by Peter J. Salmon. National Center for Deaf-Blind Youths and Adults (105 Fifth Avenue, New Hyde Park, New York 11040), 1970. 103p. This is the final report on the seven-year period (1962-1969) spanned by the Anne Sullivan Macy Service for Deaf-Blind Persons. The Service was a Regional Demonstration and Research Project sponsored by the Social and Rehabilitation Service, U. S. Department of Health, Education, and Welfare; it was conducted by the Industrial Home for the Blind and led to the establishment of the National Center for Deaf-Blind Youths and Adults.

Aid to the Blind in California; Fifty Years of Program Development, 1919-1969, by Perry Sundquist. California Council of the Blind, Inc. (205 South Western Avenue, Los Angeles, California 90004), August 1969. 55p. Mr. Sundquist served as chief of the Division for the Blind in the California State Department of Social Welfare from June 1941, until his retirement in June 1968. Since his retirement he has served as editor of the *Braille Monitor*, the publication of the National Federation of the Blind.

50 Years of Vocational Rehabilitation in the U. S. A., 1920-1970. An illustrated 30-page booklet published by and available from the U. S. Department of Health, Education, and Welfare, Social and Rehabilitation Service, Rehabilitation Services Administration, Washington, D. C. 20201.

Annie Sullivan; a Portrait, by Terry Dunahoo. Reilly & Lee Books (Division of Henry Regnery Company, 114 West Illinois Street, Chicago, Illinois 60610), 155p. \$4.95. Juvenile biography of Helen Keller's famous teacher.

Fear, Phobia and Fantasy, by John A. S. Shaw. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London WIN 6AA, England), Vol. 54, No. 636, April 1970, pp. 91-93. The author, who is blind himself, discusses the fear and timidity experienced by blind individuals.

Maternal Reactions to the Birth of a Defective Baby, by James F. Kennedy. *Social Casework* (44 East 23rd Street, New York, New York 10010), Vol. 51, No. 7, pp. 410-16. Study findings suggest that mothers may need an early period of separation from the baby to resolve feelings of loss and mourning.

Systemic Drugs, Steroids, and Vision, by W. Morton Grant. *The Sight-Saving Review* (National Society for the Prevention of Blindness, Inc., 70 Madison Avenue, New York, New York 10016), Vol. 40, No. 1, Spring 1970, pp. 19-29. Paper presented at a symposium on "Practical Management of Common Eye Problems" sponsored by the Massachusetts Society for the Prevention of Blindness and others, Boston, October 1969, reviews the

ocular side effects from systemic medications that are familiar to ophthalmologists.

Getting New Wheels, by Corwin Hansen. *BVA Bulletin* (Blinded Veterans Association, 2121 P Street Northwest, Washington, D. C. 20037), Vol. 25, No. 3, May-June 1970, pp. 4-8. Personal narrative

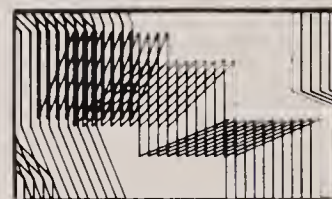
of the rehabilitation process at the Western Blind Rehabilitation Center, Veterans Administration Hospital, Palo Alto, California.

The June 1970 issue of *World Health*, edited by the World Health Organization

of the United Nations (available from Columbia University Press, 2960 Broadway, New York, New York 10027), is devoted to eye problems. The issue is 35-pages long and contains articles on trachoma, onchocerciasis (river-blindness), cataract operations, and the new treatments used for detachment of the retina. Copies cost 50¢ each. —M.M.R.

Answers to Accreditation Questions

National Accreditation Council for Agencies Serving the Blind and Visually Handicapped



Q. How does NAC recruit the members of its on-site review teams?

A. When an agency or school has submitted its completed self-study and is ready for an on-site review, NAC considers the various functions covered by the agency's report. NAC then seeks to match the functions with the special expertise of persons on the On-site Review Roster. Since agencies and schools for the blind have a wide variety of services and subject matter, team members must represent a wide variety of disciplines.

These persons have been included in the roster because of their knowledge and experience and because they have agreed to make themselves available, other commitments permitting. Team members serve without pay because they are dedicated to the cause of higher pro-

fessional standards to bring about better services for blind people. They are leaders in administration and in the various specialties in the field.

As more and more agencies are ready for their on-site reviews, a larger roster of potential team members is needed. NAC would welcome your suggestions of persons whom you know to be interested and qualified for this important service.

Q. Suppose the on-site team is not in agreement with the objectives of our agency—how can the team evaluate our effectiveness?

A. The on-site review team does not "agree" or "disagree" with your objectives. Team members accept the objectives as stated by you. In the accreditation process your agency is evaluated in the light of its own objectives as set forth in your self-study.

Sometimes an agency will discover, during its self-study, that it is not providing all of the services that it should provide if it is to meet all of its stated objectives. Then it must decide: should we add to our services or cut down on our objectives? The decision is up to you.

An agency does not have to be all things to all men in order to be accredited. But the service it *does* offer should meet nationally accepted standards.

What is your question about accreditation? Send it to the National Accreditation Council, Suite 1406, 79 Madison Avenue, New York, N.Y. 10016. If it is of general interest, it may be answered in this column, but, in any case, you will receive a direct, prompt reply.



■ The 1970 Migel Medal will be presented October 22 to Richard E. Hoover, M.D., developer of the long cane travel technique, and Roy Kumpe, executive director of Arkansas Enterprises for the Blind, Little Rock.

The award is given annually by the American Foundation for the Blind in recognition of outstanding contributions to the field of work for the blind on the professional and voluntary levels. First presented in 1937, it is named for the late M. C. Migel, first president of the Foundation.

Dr. Hoover will receive the medal for voluntary services and Mr. Kumpe for professional services.

Dr. Hoover, chief of ophthalmology at the Greater Baltimore Medical Center, worked with blinded veterans immediately following World War II, during which time he developed the long cane and the technique for its use.

Dr. Hoover has continued his interest in blindness, serving as consultant on typhlo-peripatology to Boston College and Western Michigan University, and consultant in ophthalmology to the Veterans Administration from 1953 to 1967 and to the Maryland School for the Blind since 1962. He is chairman of low vision aids for the National Society for the Prevention of Blindness and a member of the board of directors of the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped and of the American Foundation for Overseas Blind.

Mr. Kumpe has been active in work for the blind since 1939 when he instituted the vending stand program in Arkansas which led to the establishment in 1947 of the Arkansas Enterprises for the Blind.

Mr. Kumpe is a former president of the American Association of Workers for the Blind; an organizer and former president of the Association of State Agencies Serv-

ing the Blind; past district governor of District 7-R of Lions International; and a recipient of the Lions Humanitarian Award.

■ George E. Keane, who retired last December as assistant executive director of the Industrial Home for the Blind, Brooklyn, died August 10.

Mr. Keane, who had been blind since the age of 12 joined IHB in 1927 as a teacher, and had been assistant executive director for community relations since 1950. From 1956 through 1962 he was project director for two joint Office of Vocational Rehabilitation—IHB projects on Rehabilitation of Deaf-Blind Persons and a Research and Demonstration Project on Speech and Hearing Services.

At his death, Mr. Keane was working on the research for a federally-sponsored project to gather and publish information on philanthropic and social rehabilitation programs all over the world from the pre-Christian era onward.

In 1964, Mr. Keane received the Ambrose M. Shotwell Award of the American Association of Workers for the Blind.

■ The Visual Science Information Center, covering the field of vision, has been established at the University of California at Berkeley under provisions of the Education Improvement Program section of the Health Professions Educational Assistance Act. Still in its development state, an announcement will be made by the Center when services are available to the public. Further information is available from the director, Harold R. Gibson, Visual Science Information Center, University of California, Berkeley, California 94720.

■ The National Center for Deaf-Blind Youths and Adults will be permanently housed at Sands Point, Long Island, New York. The property, a part of the former Naval Training Devices Center, was recently turned over to the Industrial Home for the Blind, Brooklyn, New York, for that purpose. No date has been set for the start of construction.

The first two field offices of the National Center have been opened, one in Glendale, California, the other in Atlanta, Georgia.

■ Effective January 1, 1971, the Detroit Society for the Prevention of Blindness will merge with the Metropolitan Society for the Blind, Detroit. Roland Blank, president of DSPB, will serve as president of the new organization. Charles Montgomery, president of the Metropolitan Society, will serve as chairman of the board.

■ Robert Sakon, of England, Arkansas, has been elected president of Arkansas Enterprises for the Blind, Little Rock. Mr. Sakon, a philanthropist and merchant, has served on the board of AEB for the past two years. Other new officers for the 1970-71 term are Robert E. Shepard, Pine Bluff; Col. Claude N. Shaver, Cherokee Village; C. R. James, North Little Rock; and Alvin Reap, Little Rock; first and second vice-presidents, secretary, and treasurer, respectively.

■ *The Blind Who Can See*, a new 15-minute, color, sound film-strip, is available from the Metropolitan Society for the Blind (1401 Ash Street, Detroit, Michigan 48208). In the presentation, three partially sighted persons are shown being tested in a low vision clinic. The background and history of low vision aids are also included. The film-strip may be purchased for \$30.00 or rented for two weeks for \$5.00.

■ At a joint commemoration to be held in Washington, D. C., the week of October 12, 1970, the Prosthetic and Sensory Aids Service, U. S. Veterans Administration, and the Committee on Prosthetic Research and Development (CPRD), National Research Council, National Academy of Sciences-National Academy of Engineering, will celebrate the 25th anniversaries of their founding.

■ Ruth Askenas, supervisor of the Speakers' Bureau for the New York Association for the Blind, New York City, since 1953, retired on July 23, 1970. Miss Askenas had served the Association in various positions for 46 years.

■ Alexander Scourby, noted actor and narrator, received the Francis Joseph Campbell Citation of the Round Table on Library Service to the Blind, American Library Association, in recognition of his 32 years of recording talking books for the Division for the Blind and Physically Handicapped, Library of Congress. The citation was presented to Mr. Scourby by Marian Leith, chairman of the Round Table, at a luncheon held in Detroit on June 29, 1970.

■ Martin P. Strahs, operations manager of Lighthouse Industries, Long Island City, New York, has been appointed general manager of this division of the New York Association for the Blind.

■ Maya M. Reid, of New York City, has been named assistant curator of the Mary Duke Biddle Gallery for the Blind, North Carolina Museum of Art, Raleigh. Miss Reid has owned and operated an art gallery, the European Gallery, in New York since 1957.

■ Dr. Gertrude Rand Ferree died June 30, 1970, at the age of 84. Dr. Rand, as she was known professionally, worked for many years on research on human vision. With her husband, Dr. Clarence E. Ferree, she developed and held a dozen patents for lighting devices, optical and ophthalmological instruments, and glare control devices.

■ Alex H. Townsend, coordinator of regional operations for the American Foundations for Overseas Blind, New York City, has been named to succeed Eric T. Boulter as associate director of AFOB. Mr. Boulter is retiring as of September 30 and Mr. Townsend will assume his responsibilities on October 1. Mr. Townsend, who has been with AFOB since 1962, has served as director of the regional offices in Beirut, Lebanon, and Paris, France.

■ John S. Crowley, senior partner of McKinsey and Company, international management consultants, New York City, has been elected president and chairman of the Executive Committee of the American Foundation for the Blind, New York City. At the same time as he assumed the presidency of AFB, Mr. Crowley was named president of the American Foundation for Overseas Blind, also in New York. In addition to his work for the blind, Mr. Crowley is director, Educational Broadcasting Corporation (WNBT, Channel 13, New York City); director, New York Chapter of American Red Cross; and trustee, the Whitby School, Greenwich, Connecticut, and Newton College Advisory Board.

Mr. Crowley succeeds Jansen Noyes, Jr., who has become chairman of the Board of Trustees of AFB. Mr. Noyes in turn succeeds Eustace Seligman, who has become honorary chairman of the board after 37 years of service to the Foundation. Also elected to the Board of Trustees was Mitchell Brock, partner, Sullivan & Cromwell, as secretary replacing Richard H. Migel, who has been elected vice-chairman of the Board.

Coming Events

October 4-8 National Industries for the Blind, Annual Meeting of the General Council of Workshops for the Blind, Denver.

October 5-9 American Academy of Ophthalmology and Otolaryngology, Las Vegas.

October 11-14 Professional Rehabilitation Workers With the Deaf, Rochester, New York.

October 12-16 Audio Engineering Society, New York City.

October 17-22 American Academy of Pediatrics, San Francisco.

October 22 Foundation Day, American Foundation for the Blind, New York City.

October 26-30 American Public Health Association, Annual Meeting, Houston.

October 28-29 American Association for World Health, Annual Meeting, Houston

October 28-31 National Association for Retarded Children, Minneapolis.

November 4-7 National Easter Seal Society for Crippled Children and Adults, Annual Convention, Chicago.

November 7-13 American Occupational Therapy Association, New York City.

November 19 National Society for the Prevention of Blindness, Annual Meeting, New York City.

December 1-5 Special Education Media Conference, Council for Exceptional Children, San Antonio.

December 8-11 American Public Welfare Association, San Francisco.

December 13-18 White House Conference on Children, Washington, D.C.

1971

April 18-24 Council for Exceptional Children, 49th Annual International Convention, Miami Beach.

April 30 National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Annual Meeting, Atlanta.

May 9-12 International Association of Rehabilitation Facilities, Las Vegas.

May 16-21 National Conference on Social Welfare, Annual Meeting, Dallas.

May 17-20 National Braille Association, 11th National Conference, Chicago.

Sensi-Quik

The Touch Cane for Walking
Faster with Safety

The New Fiber-Glass Cane

Sensi-Quik's shaft is made of large diameter, tapered tubular fiber-glass with gleaming white pebble finish, and has a bright red band at its tip. The smart-looking contour handle is of black vinyl. The 1/2-inch diameter, diamond-hard, tungsten-carbide working tip resists wear, and produces sharp, useful touch information. The cane is put together with epoxy, as fiber-glass golf clubs are, to withstand repeated sudden impacts.

The Sensi-Quik fiber-glass model comes with either crook or contour handle and either carbide or replacement steel tip. Sensi-Quik is also available in high-strength, nickel-plated, steel shafts recommended for 50- to 60-inch canes when extra strength is desired. The steel shaft adds three to four ounces to the weight of the cane.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact



Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

Franklin S. Clark
The Go-Sees
166 East 92nd Street
New York, N.Y. 10028

THE NEW Outlook FOR THE BLIND

November 1970 Volume 64 Number 9

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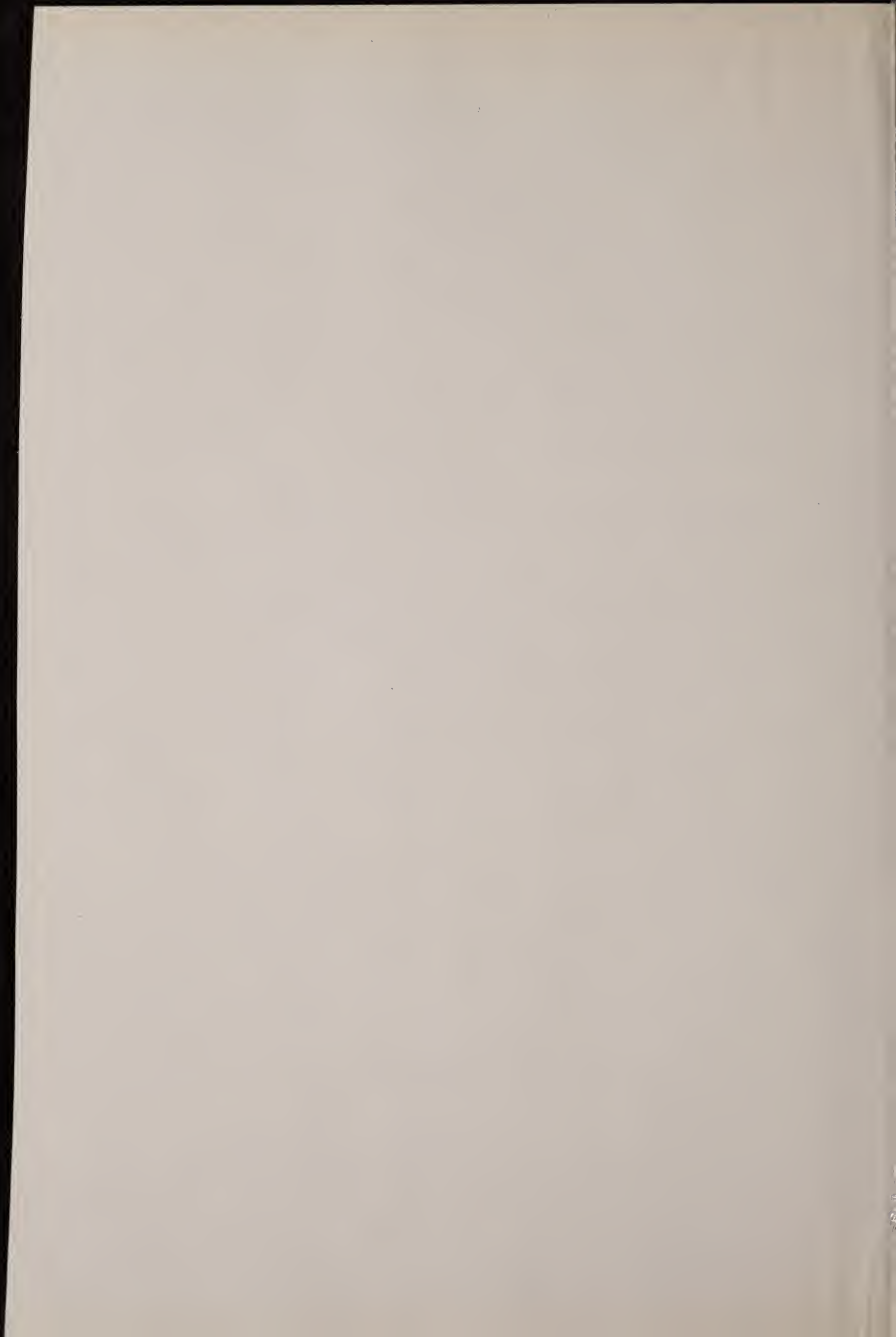
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Factors Influencing the Acceptance by Rehabilitation Clients of Instruction in Script Writing and Typewriting

The ability to read and write is one of the major losses which occurs with the loss of sight. With this ability taken away, the blind person, in many instances, must depend upon someone else to perform the day-to-day tasks involving reading and writing. If there is no other individual available to write letters or to make out grocery lists, the blind person often has no means of written communication. In addition, he is usually not aware that such skills can be relearned.

When first approached concerning a method of writing, the student and the rehabilitation teacher must determine whether the use of the typewriter or a script writing aid is best suited for the person involved. It has been this writer's experience that persons who did not type before losing their sight are more often interested in learning to write with a pen or pencil as they had before. This appears to alleviate much of the anxiety concerned with learning a new skill which is completely foreign to them. Persons who have typed before losing their sight are often anxious to reacquire both former skills. It has also often been found that older persons are reluctant to experiment with typing if they have not done so previously. This is of particular interest to the rehabilitation teacher of the adult blind, because statistics indicate that the rehabilitation teacher will be working with increasing numbers of geriatric students in the future.

There are a number of script writing aids available from which an appropriate selection may be made. One, the corrugated writing board, was used in this study. This is an inexpensive and easily replaced aid for which a manual of lessons, written by counseling teachers for the Illinois State Department of Children and Family Services and published at Western Michigan University, is available. These lessons are adaptable for each individual and do not, therefore, overwhelm people who have little education or who are not academically inclined. Persons who have long been out of school are often reluctant to embark upon any type of academic program, no matter how elementary it is. The rehabilitation teacher must be careful to keep assignments simple, but effective, so that the student will not become discouraged and discontinue the lessons.

□ The purpose of this paper is to try to determine whether there are significant factors in students' decisions to accept instruction in script writing versus typewriting in a rehabilitation teaching caseload. The caseload at the time of the sample consisted of 40 persons (eight men and 32 women). Of these, 24 accepted script writing lessons, including nine who acquired typewriting as well. One person took typing only. The balance of the sample (15 persons) took neither script writing nor typing.

SUZANNE JOHNSON

Miss Johnson is a rehabilitation teacher of the adult blind, Michigan State Department of Social Services, Kalamazoo.

Choosing the skill

Script writing aids

The Sample

	20-29	30-39	40-49	50-59	60-69	70-79	80-89	Total
Script Writing	2	2	2	5	10	1	2	24
Typewriting	1	0	2	4	3	0	0	10

TABLE 1
Age and Choice of Skill

How important a factor is age? From the statistics in Table 1 (accumulated in this study) it would seem that age does not necessarily preclude people from taking typing, although a smaller number of people appear to be interested in taking typing at all ages. The accessibility and cost involved in obtaining a typewriter is often a factor; at least 20 of the 24 persons who took script writing did not have a typewriter in working order at their disposal. The principle factor involved seems to be that most people were in the habit of writing script before losing their sight and, therefore, wanted to regain that habit. In other words, a person who is willing to learn to write again without sight is not unmotivated, while the one who is willing to learn a second method of written communication as well is demonstrating a much greater effort. It is not surprising, then, that a minority of students take typing, while a much larger group of people of all ages are interested in script writing.

	Men	Women	Total
Script Writing	4	20	24
Typewriting	2	8	10

TABLE 2
Sex and Choice of Skill

There were many more women than men involved in the study and Table 2 shows that there are more women taking both script writing and typing. The proportion of women in the overall caseload is consistent with available statistics which indicate that there are many more women than men eligible for all types of services. A factor in the number of women who took script writing or typing may be that when the woman of the house is homebound, much of the letter writing and other clerical work ordinarily falls upon her shoulders.

Three of the men involved in the study were in their 50's and one was in his 40's. Two had completed the eighth grade, one the tenth grade, and one high school. One was totally blind, one had 20/200 vision, and the two others had some useful vision. The statistic which seems to be most pertinent is that all the men were under retirement age.

	8th grade or less	9th to 12th	College	Total
Script Writing	17	5	2	24
Typewriting	6	3	1	10

TABLE 3
Education and Choice of Skill

How large a factor is education in the services desired by an individual after losing his sight, particularly learning communication skills? Education

would definitely play a role in former employment. It would, therefore, seem logical to expect education to be a factor in the employment objectives of persons after losing their sight and in their need for relearning former skills. Only one person in this study was employed at the time of the study, an individual in his 40's, who had completed the eighth grade and was working as a janitor. Table 3 shows that of the 25 persons in this study, 17 had eighth grade education or less. Although these people may not strive for academic type employment, they may still be interested, along with people who do not have employment goals because of age or other factors, in learning communication skills to meet their daily needs. Persons who did not attend high school probably had no previous opportunity to learn typing in school, certainly a factor in whether or not they now own a typewriter.

	<i>Totally Blind</i>	<i>Light Perception to 5/100</i>	<i>5/100 to 20/200</i>	<i>Total</i>
Script Writing	6	11	7	24
Typewriting	4	3	3	10

The information presented in Table 4 indicates that there does not appear to be a direct relationship between degree of vision and whether or not a person accepts typing or script writing. Education, age, and motivation all play more significant roles. Socio-economic status and availability of a typewriter would also seem to be more important factors.

□ The 10 people who took typing varied considerably in life circumstances. The one consistent factor among them was that the household owned a typewriter. One student was the wife of a former mayor. A cab driver's wife took typing because a typewriter had been acquired for their teenage daughter. There were a number of instances of persons with children in which a typewriter was needed for those in school. One man lived with his wife and daughter, both of whom were teachers. There were only two persons living alone who took typing. One of them was a 60-year-old, partially sighted woman interested in employment. She was the only person who was able to obtain a typewriter after beginning rehabilitation teaching services. It is obvious, therefore, that those persons who own typewriters are more likely to want typing instruction.

The people who only took script writing were also a widely varied group of individuals. There was a widow in her 60's and another in her 80's who had had no funds to purchase a typewriter. A mother in her 30's had had typing previously in school and felt that she could brush up on her typing skills herself if she ever wanted to do so. One partially sighted student in her 50's attempted to obtain a typewriter but was unable to do so. The only conclusion that can be reached is that most of this group did not have access to a typewriter.

□ The alleviation of anxiety that comes with being able to attend to one's personal affairs is very important. Being able to write letters without dictat-

TABLE 4
Degree of Vision and Choice of Skill

Life Circumstances of Students

The Value of Learning Communication Skills

ing them to a second person restores dignity as well as privacy. Addressing envelopes at three in the morning, if one wishes to do so, rather than waiting until it is convenient for someone else allows for both independence and individual responsibility. Each individual's handwriting is unique, as is his individual personality, and many people feel a sense of having recovered a part of their identity after salvaging their handwriting. This is valid even when the handwriting has always been almost illegible. Those persons who pursue typing often speak of the orderliness and neatness of typed materials.

□ The principle conclusion drawn from this study is that a much smaller group of people are interested in typing than in script writing. Indeed, learning script writing is one of the services most frequently requested of the rehabilitation teacher, and generally instruction in communication skills is one of the more well-received services offered. Students who are physically and mentally able to do anything are usually interested in this skill, including geriatric students who may not be interested in homemaking or other more strenuous activities. It can be taught to persons living in a son's or daughter's home or to persons in a nursing home setting. Typing is taught to a minority of students—for the most part to those who own or have access to a typewriter.

Conclusions

Mobility Training in Australia

The National Guide Dog Training Center, Melbourne, the main facility of the Royal Guide Dogs for Blind Associations of Australia, is providing instruction in the use of the dog guide, the long cane, the ultrasonic torch, and the new binaural spectacles that were recently developed by Professor Leslie Kay of Canterbury University, Christchurch, New Zealand. One of the only mobility training centers in the world providing such comprehensive service under one roof, the Center is able to supplement the less specialized services being provided by other agencies throughout Australia and New Zealand. In addition to providing mobility training for blind persons, the Center holds seminars for trainers and sends its own staff members overseas for additional experience and training. During 1970, the Center is cooperating with agencies in Japan for the training of a Japanese mobility instructor and the establishment of a guide dog training center there.

An Orientation and Mobility Program for the Geriatric Blinded Adult

The lesson plan of an orientation and mobility program follows a sequence of development beginning with basic skills and techniques and culminating in skilled travel with the use of the long cane in a congested business area. The goals of the program, therefore, are to teach those skills and techniques required by the blind person for safe, efficient, and independent travel. And, for the adventitiously blind younger person, such comprehensive training is indeed desirable. But what of the blind geriatric person whose needs may be much different? With such an individual it may be necessary to gear the learning material to problems which are generally associated with the process of aging. Often he needs only to learn to use a sighted guide and the techniques of environmental orientation.

□ A blind geriatric person beginning a rehabilitation program is confronted with a series of changes: emotional, psychological, social, and physical. To achieve the goals of the orientation and mobility program the integral pattern concepts of travel must be learned and understood. Realizing that the blind geriatric person may be restricted in activity and muscular movements, the importance of a clear picture of one's environment becomes even more necessary than to the younger, adventitiously blind person. To achieve this it may be necessary to give instruction on pattern development, environmental visualization, and route analysis and synthesis. Concepts involved in such a lesson would include information on general and specific familiarizations, tactual perception of textures, thought of color and dimensions, bodily orientation, visualization of geometric forms, generalities of turns, compass directions, and recognition of sounds and shapes.

It would probably be most desirable and beneficial to introduce these orientation lessons at a time when positive experiences should be encountered by the blind geriatric person. After some confidence has been gained in the techniques of using a sighted guide, the person would be most receptive to them. For maximum value, they should be tied to the activities of the client with the instructor providing directive information. When a person is confronted with a learning experience that he can comprehend and use, it can help determine his attitude for the rest of his rehabilitative program.

□ The long cane cannot be presented to the blind geriatric simply as a routine part of an orientation and mobility program. For many, this phase of training may be unrealistic. Basic skills will provide sufficient training to fulfill the needs of most of these clients. When factors such as the desire to remain in a protective setting, family interference, and physical limitations are taken into consideration, the long cane technique should be de-emphasized and only brought forth in the unusual case.

This idea may be difficult for some orientation and mobility instructors

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Modifying the Program

Timing the introduction of lessons

Long Cane May Not Be Appropriate

to accept. Yet, until it is accepted, the instructor will not be able to gain the trust and confidence of the blind geriatric person. In preparing to organize a program, the instructor must be ready for a long-term presentation of basic skills and techniques. The emphasis may be on the sighted guide technique, which is perhaps the geriatric's principle mode of travel outside of his immediate, protective environment. Direction-taking techniques and arm across the body with and without trailing will have to be stressed until the person feels confident that he can travel without apprehension. At this point, the blind geriatric person's training may terminate before the introduction of cane travel. It is imperative to accept the idea that not all orientation and mobility training must include long cane instruction. A program for geriatric clients, one which serves their real needs, must be geared to the type of travel that will be required by them and not that desired by the instructor.

Client-centered training

A lesson unit for travel area can be formulated on the general lesson plan. Specific lessons would have to branch out from these basic lessons because of the real, individual problems which are involved with each client. To develop a blind geriatric orientation and mobility program, several distinguishing features of the blind geriatric ought to be considered as guidelines.

Initially, the medical aspect must be explored by a doctor to determine if the physical exertion of independent travel would be detrimental to the client's physical welfare. Health problems related to diabetes, high blood pressure, low blood pressure, arthritis, heart conditions, nervous system disorders, and abnormalities of gait and joint motion can cause modification of a program. These problems can affect the client's mental aptitude for such training. The client's mental alertness and retention must be such that he would normally be able to function as an independent person if he were not blind. Probably the decisive intrapersonal quality is the client's motivation, his drive to be self-sufficient through greater mobility.

□ The goal of such a program is, naturally, increased activity and the companionship of other people, blind and sighted. With the advent of a geriatric sub-culture, the opportunities to be socially active are available through an expanding group of organizations, associations, and clubs that have been formed especially for geriatric persons. Both sighted and blind geriatric persons, however, encounter society's reluctance to permit them to do things for themselves. In many cultures it is the custom to care for one's elders, while in others there is the attitude that the older person needs a protective environment. Any geriatric program must contend with these attitudes.

Goals of Program

Therefore, the planning and organization of an orientation and mobility program for the geriatric blind person should be of a different form than that for the younger blinded adult. Mental retention and orientation often deteriorate with old age and, consequently, the material taught by the instructor may touch upon only part of what would ordinarily be included in an orientation and mobility program. The environmental and personal factors which control public opinion must also be dealt with if a suitable, practical, and worthwhile attempt is to be made in aiding the blinded older person to better accept and function with blindness.

Auditory Discrimination Ability of Visually Limited Children

Since audition is the most important input modality for the visually handicapped,²⁴ detailed study in the area is warranted. Most investigations pertaining to the auditory skills of visually limited persons have been concerned with the relationship of audition to mobility^{3,5,8,21} and to listening comprehension,^{2,12,22} or with the question of sensory compensation.^{13,14,26} Auditory perception, however, has remained relatively unexplored. An exception is Axelrod's study,¹ which included auditory perceptual tasks in an investigation of the effects of blindness on the remaining sense modalities. Axelrod found no significant difference in auditory discrimination abilities of visually limited and sighted children when the task involved differentiation among environmental sounds.

□ Acknowledging the recognized importance of audition to language acquisition, the ability of the blind to distinguish among speech phonemes should be investigated. The purpose of this study, therefore, was to examine selected characteristics of this skill in visually limited and sighted children. The following null hypotheses were formulated:

1. Visually limited and sighted children with similar mental ages (MA) and chronological ages (CA) do not differ significantly in sound discrimination ability.
2. Visually limited children who vary in degree of visual acuity do not differ in sound discrimination ability.
3. No significant differences exist in the relationship of sound discrimination ability to CA, MA, and tactile-kinesthetic ability in visually limited and sighted children.

Data were selected from a pool of information on 85 visually limited and 77 sighted children from private residential and public schools in the greater Philadelphia area. The visually limited group included 48 males and 37 females, while the sighted group was comprised of 39 males and 38 females. The median age of the visually limited children was 98 months with a range of 75 to 136 months. The median CA for the sighted group also was 98 months, with a range of 70 to 132 months. Either the Hayes-Binet Intelligence Scale, the Verbal Scale of the WISC, or the Slosson Intelligence Test, as adapted by Hammill, Crandell and Colarusso,¹¹ was used to estimate intellectual performance. The IQ's of the visually limited sample ranged from 38 to 138, with a median of 88, and the IQ's of the sighted sample ranged from 82 to 161 with a median of 107. Black and white children were included in both samples. Subjects with known or suspected deficits in auditory acuity were excluded. Neither bilingual children nor those whose native language was not English were included in the pool.

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Null Hypotheses

Selection of subjects

□ Attempts to appraise sound discrimination skill have employed nonsense syllables,^{27,29} pictures,²⁰ isolated speech phonemes,⁶ and word pairs.^{16,31} Studies using these tests have resulted in certain general findings: (1) auditory discrimination ability is developmental, increasing with age to seven and a half or eight years, although the rate of increase decelerates around four and a half years of age; (2) high positive correlations are generally reported between sound discrimination ability and the articulation of speech sounds; and (3) lower but still significant correlations have been found among sound discrimination ability, reading ability, and intelligence-test scores.

In this study, sound discrimination ability was measured by Form A of the Irwin Sound Discrimination Test.¹⁶ This test was designed for use with exceptional children. Tests of parallel form reliability and internal constancy yielded coefficients in the .80's. Validity was demonstrated using the Templin Sound Discrimination Test,²⁸ resulting in coefficients of .73 and .83. The Irwin Test consists of 30 items of word pairs, five of which are identical (foils) and 25 which differ in a single phoneme. Discrimination between initial and final consonant sounds, and between medial vowel and consonant sounds is required. Administration of the test includes practice items to determine whether or not the subject has sufficient auditory acuity to hear the stimuli and whether he understands the concepts of "same" and "different." Both words of each pair are pronounced by the examiner, who does not allow the subject to see lip movement. The subject indicates verbally whether or not the words are the same or different. The test is scored by counting the correct responses of differing pairs.

In order to demonstrate the relationship of sound discrimination to the other key input modality, a test of tactile-kinesthetic discrimination⁴ was administered individually to each subject. The test's reliability, estimated by the Kuder-Richardson formula, was .87, while validity was determined by its relationship to IQ, grade level placement, and braille reading ability.¹⁰ The test consists of three-dimensional geometric forms embossed in plastic sheets by a Thermoform machine. The first 12 items present a series of five figures, all of which are alike with one exception. The blindfolded subject is instructed to "Find the one that is different." The remaining 13 items are composed of a stimulus figure followed by four others, one of which is like it. The subject is instructed to "Find another figure just like this first one." Only the fingertips are used, but the use of either or both hands in any way was permitted. No time limit was imposed. The score is the number of correct responses.

□ For the analysis of data, the .05 level of confidence was accepted for statistical significance. To test the first hypothesis, 30 pairs of visually limited and sighted subjects were matched for CA and IQ. The CA range for the visually limited sample was 75 to 119 months. The $\bar{X}$ was 98.7 with a SD of 12.4 months. For sighted subjects the range was 72 to 116 months, with an $\bar{X}$ of 98.1 and a SD of 13.8 months. Intelligence quotients for the visually limited sample ranged from 81 to 137, with a $\bar{X}$ of 101.3 and a SD of 13.9. The scores for sighted subjects were from 82 to 136, with a $\bar{X}$ of 101.1 and

Description of Instruments

Irwin and Templin tests

Tactile-kinesthetic discrimination also tested

Design—Testing the First Hypothesis

a SD of 13.8. As the sound discrimination scores for both samples were markedly skewed, the Median Test as well as the Fisher's *t* were employed to determine whether the groups differed in sound discrimination ability.

For the second hypothesis, the total data pool of visually limited subjects was used. The children were divided into three groups according to visual acuity and were matched for CA and IQ. Subjects in Group 1 had a visual acuity of 5/200 or less in the better eye after maximal correction (*N* = 32); those in Group 2 had useful vision i.e., acuity which ranged from 6/200 to 20/200 (*N* = 28); and those in Group 3 were partially sighted, i.e., acuity of more than 20/200 but less than 20/70 (*N* = 15). The $\bar{X}$ CA's for the acuity groups varied from 99 to 104 months (SD's of 13.1 to 13.6). The $\bar{X}$ IQ's ranged from 90 to 94 (SD's ranged from 13.7 to 18.2). An analysis of variance was employed to test the differences among the sound discrimination scores for the three groups.

The third hypothesis employed the same subjects used in the first hypothesis. Meaningful comparisons of the other variables are possible only if CA and MA are held constant. For this reason the subjects who had been used to determine the differences in sound discrimination ability between the groups were assessed for tactile-kinesthetic skills. Pearson product-moment correlation coefficients were computed between sound discrimination scores and MA's, CA's, and tactile-kinesthetic scores for the nonsighted and sighted samples. Differences between these coefficients then were compared for significance by applying the *z'* transformation.

Sample	$\bar{X}$	SD	<i>t</i>	<i>p</i>
Visually Limited	19.7	6.9	0.07	NS
Sighted	20.1	6.2		

The $\bar{X}$'s, SD's, and *t* ratio associated with the sound discrimination scores of the samples are presented in Table 1. The *X*² derived from the same data was 1.67. As neither the results of the parametric nor of the nonparametric solutions were statistically significant, the difference in sound discrimination ability between these samples can be accounted for by chance, and the null hypothesis is accepted. As the visually limited children did not demonstrate superior sound discrimination ability, the assertions of Hayes¹³ and others rejecting the myth of sensory compensation are supported. The results imply that teachers should not presume auditory perceptual advantages for non-sighted children.

Source of variance	<i>df</i>	ESQ	XSQ	<i>F</i>
Groups	2	6	3	.055
Within groups	72	3954	55	
Total	74	3960	58	

F.05 for 2, 72 *df*= 3.13

Testing the second hypothesis

Testing the third hypothesis

TABLE 1
Comparison of Sound
Discrimination Scores

TABLE 2
Analysis of Variance

While the previous analysis compared the auding of sighted and non-sighted subjects, this analysis probed the effects of degree of blindness on auditory perceptual behavior. The insignificant F ratio presented in Table 2 leads to the conclusion that visual acuity, or the degree of sight, has no relationship to sound discrimination ability and that variance among the three groups of visually limited children may be attributed to chance. The null hypothesis is accepted, and the suggestion that the development of this skill is not related to visual acuity, or to the lack of it, is reinforced.

<i>Item</i>	<i>T-K</i>	<i>MA</i>	<i>CA</i>
VL	.14	.62**	.54**
<i>z'</i>	.31	.43	.84
S	.05	.53**	.34*

* *p* less than .05

** *p* less than .01

The correlation coefficients between sound discrimination scores and tactile-kinesthetic scores, MA's, and CA's are found in Table 3. The coefficients were derived for both the sighted and nonsighted samples and the *z* transformation scores which were used to test for significance of differences between samples is also presented in Table 3. For these groups there was no significant relationship between auditory discrimination ability and tactile-kinesthetic skills as measured. A substantial relationship was found for both groups between sound discrimination ability and MA. For visually limited children, sound discrimination ability also was substantially related to CA, while for sighted children the relationship was moderate. However, the *z'* transformations indicate that the differences between the samples were not significant and may be attributed to chance.

□ These findings have important implications for theories of perceptual and cognitive development. First of all, it should be noted that the failure of this study to find differences between visually limited and sighted children suggests that the early auditory experiences of both groups are similar. Secondly, even though visually limited children, for whom auding is the primary input modality, might have been predicted to have developed superior auditory discrimination skills, such was not found. The reader is referred, also, to the work of Rice.²³ His investigations seem to support the compensation hypothesis; however, he cautions against such a conclusion at this point in research.

As Jensen¹⁷ has suggested, in order for the organism to function most efficiently, integration of information from all input channels, i.e. the visual, auditory, and tactile modalities, is probably desirable. Yet, in this study, sound discrimination, an auding ability, was related neither to tactile-kinesthesia nor to visual acuity. The negligible relationships among sound discrimination ability and these two receptive modes suggest that for these subjects the various sensory perception channels develop independently of one another. Further exploration of this thesis seems warranted.

TABLE 3
Pearson Product-Moment Correlation
Coefficients of Sound Discrimination
Scores With Other Variables

Implications of Findings

While one may hypothesize from these results that auditory perception is not modified through incidental experience, the possibility of training auditory discrimination skills has educational relevance. To date such training is mostly associated with articulation therapy, but the amenability of this skill to instruction remains to be fully determined. The observed superiority in some tactile activities of braille over nonbraille readers¹⁰ and of good over poor braille readers³⁰ would suggest that training and experience are effective to some extent in improving this fundamental skill; the work of Frostig,⁷ Kephart,¹⁹ and Getman et al.⁹ strongly supports the proposition that various visual perception skills can be improved through systematic training.

The relationship of perceptual efficiency to higher cognitive development is still unresolved. Educators have assumed that the acquisition of various visual and auditory abilities are basic to certain conceptual activities. However, among the questions still unanswered is the supposition that a concentrated program of training in auditory perception would in and of itself improve performance in reading comprehension, vocabulary acquisition, abstract thinking, and listening with meaning. As visually limited children must rely on auditory input to gain information about their environment, failure to provide auditory training may account for the differences between them and sighted children in certain abstract and conceptual skills as found by Axelrod,¹ Rubin,²⁵ and Worchel.³² Therefore, the early deficits in intellectual functioning which Hayes¹⁵ reports, but which are largely overcome during the school years, could reflect the lack of opportunity to learn.

□ Unfortunately, as Furness⁸ has pointed out, little effort has been expended on the development of auditory skills. If relationships between perceptual skills and subsequent cognitive functioning do, in fact, exist, it would seem wise to institute preschool training programs for visually limited children in auditory perceptual skills. The reader is cautioned, however, that training a child in auditory perceptual skills may not in any way stimulate improvement in auditory cognitive abilities. Similar literature which has focused upon the effects of training visual skills, a considerably more researched area, has to date yielded very mixed findings.

Educational relevance of results

Unanswered questions

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Blind Persons in Data Processing: The Attitude of Industry

There are approximately 350 visually handicapped people now employed in data processing activities across the country. Considering the short period of time that this occupation has been available to the blind, this is quite a success story. While we must acknowledge the possibility of individual failures, we ought to keep in mind this over-all success and the tremendous opportunity there exists for the future. We ought to look at these failures more in terms of who or what went wrong, to keep them in the proper perspective, and to recognize fully that there are problems in many areas that still need to be solved.

The Nationwide Insurance Companies were among the first to employ a blind programmer. This was at least five years ago. Based on experience, I will try to present what the attitude of industry has been and to cover this from the viewpoint of top management, middle management, and line management.

□ The attitude of top personnel officers has been, and continues to be, one of caution, of reserve, and of suspicion as to the motives of anyone recommending a blind person for employment in a data processing operation. Generally they tend to say, "We have enough problems now; why would we want to take on more?" Unfortunately, the image of the blind person as one who can only make brooms, cane chairs, sell pencils on the street, or, at best, do routine transcription work in an office has clearly not been eliminated.

With this kind of attitude at the top level of management, it is most difficult for the blind person even to get into the personnel department to demonstrate his abilities. I suspect that up to now what success there has been is due primarily to those dedicated people, both lay and professional, who have known someone high enough in the organization to gain access to the personnel department as a personal favor.

□ Once into the personnel department and once they are convinced that they have a potential candidate, the next problem is with middle management. Here we find a variety of concerns. First there is skepticism as to whether a blind person can do the job at all. Next, they just can't see how a blind person can possibly perform as well as a sighted person. Then there is concern about the high risk of failure. In data processing operations the work load is heavy and everyone must carry his share. Middle management, when considering a blind employee, can't help but feel that there is a great risk of failure with such a person. He looks at the six months of training that is involved, pictures a failure, and sees another six months training a replacement: a loss of a year in the operation.

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Attitudes of Top Management

Attitudes of Middle Management

They are concerned about how one supervises a blind employee. Can you keep from getting emotionally involved? Is it possible to treat the blind person the same as others in assigning work; taking corrective action, including dismissal; and all the other things that go into supervision? What about the attitude of the other employees? Are they going to accept the blind person? Is there going to be the desired kind of rapport among all of the employees?

Questions

There are concerns about the safety of the blind employee. Will he be mobile? Can he really move around without getting hurt? There are many questions about the capability of the person: How was he trained? Are there additional training requirements? How does he write his program? How does he read punch cards? Will he be able to read the program listing? What equipment has he been trained on and what languages have been included in his training? There are probably other questions that they have, but I think these serve to illustrate the attitude at this level of management.

And more questions

□ Moving on to line management, the questions are geared more to the practical aspects of the day-to-day operation. How will he gather and record the requirements to be provided by a programmer? How will he be able to handle the testing of programs? How does he develop the necessary hard copy documentation so that he can keep track of the input, the logic, and the end product being sought? What about his technical understanding of the equipment and the ability to work with it? Will he be able to do maintenance work on programs? Not being able to use flow charts and other printed copy, what will be his source of data for maintenance? How do you teach him new program languages and train him on new equipment? Again, I am sure there are other areas of concern, but I think these serve to illustrate the problems at the line management level. All of this illustrates what the attitude has been in industry regarding the blind in electronic data processing.

Attitudes of Line Management

Although I will not go into any detail about the solutions to these problems that have been worked out, I would like to comment on a couple of the initial concerns of line management. In the area of the technical understanding of the equipment, we have found that the blind programmers have a better understanding than the sighted ones. As things have evolved, our blind programmers are often the advisers to other programmers on complex technical matters.

Blind programmers are often among the best

Concerning the rapport between sighted and blind workers, a recent incident will serve to illustrate that it is quite normal. Recently, the division in which one of the blind programmers works was having a farewell party for an employee who was leaving the company. They had gone to a local restaurant for dinner. As the waitress was moving around the table, taking orders for cocktails, she eventually got to the blind man. Before he could order, one of the sighted members of the group spoke up and said, "Don't let him have anything, he has to drive us home." Such kidding is routine and enjoyed by all.

The general attitude about the blind programmer, from top management on down, is now excellent in our company. There were problems, but in retrospect, none of them were as difficult as had been anticipated. In all fairness, it

Attitudes improved with experience

must be admitted that there are still problems, but they are minor and no longer of any serious concern to management.

While I am sure there have been some individual failures, I suspect that the over-all experience of employers has been comparable to ours. We, of course, are thoroughly convinced that the employment of capable blind people in our data processing operation has been a good thing for all concerned. We know that we are getting our money's worth from the standpoint of quantity and quality of work and that the blind person has benefited in terms of a better paying job, greater use of his talents and abilities, and a promising future. In addition, he has the satisfaction of competing in a challenging and growing area of business operations.

I suppose the most we can hope for now is to continue getting over the hurdles we have had and still have. From a recent experience in trying to find employment for a blind programmer, I found that the attitudes that existed in our company five years ago are quite common in other companies today.

□ To overcome these attitudes we need to get that first blind data processing employee into more and more companies of all kinds. We must continue using our friends at high levels of management to get a foot in the door. We need to encourage companies that do employ blind programmers to take advantage of every opportunity through the public media and within their industry to let others know about their achievements and successes. All of these things will be a great help in further documenting the fact that the employment of capable blind people is just simply good business for all concerned.

There is also a serious responsibility with regard to the support that can be provided by agencies of all kinds that serve blind clients. They must learn more about the needs of industry and maintain high standards in seeking out qualified blind people to be referred to training centers. They must also seize the opportunity, especially in the secondary schools, to counsel and encourage qualified students to prepare themselves for careers in data processing by going on to a university or technical institute. Support agencies must also be prepared to provide fast, quality service, when necessary, for the braille or tape recording of manuals, instructions, etc. that blind programmers need for keeping up with changes in all areas of the technology.

The present specialized training facilities must be sure that the training in all areas is in tune with the needs of industry. They must be sure that the blind person is qualified in the use of all the machine languages necessary and the various makes of equipment used in industry.

For the future, we should not only hope for, but work to insure, that all of the problems we have today are eliminated. We hope it will not be too long until the blind applicant is looked upon as just a normal part of the employment market, with industry hiring and training the qualified blind employee routinely as we now do with sighted employees.

Our successes so far have dealt primarily with getting the blind into production jobs in data processing. In most organizations today, however, the ambitious and capable employee must eventually move into supervision if he is to get ahead.

Overcoming Negative Attitudes

The role of agencies

The role of the training facilities

□ What does this mean for the blind programmer's future? Where does he go from here?

Our people have thought about this problem and, despite their fine general attitude, they have a "hang up" about moving a blind person to the supervisory level. When they look at all of the researching, digging into past information, the need to check other people's work, and all such things that are part of supervision, they just can't see how a blind person could do it. I suppose a lot of this is due to the fact that we, as well as our business processes, are geared to the "paper track," the printed word. With all of the sophisticated communication facilities that exist, there ought to be some way around this; all of us in industry and in the training areas should be working to solve this problem so that the blind person has the same opportunity for advancement as anyone else.

Our activities so far have been concerned primarily with the most capable of the blind people. What are we going to do about those people who can only be 75 percent effective? Realistically, industry cannot today retain this kind of employee. Such individuals can probably get a job, but it probably will be the routine, repetitive kind of thing that we are trying to get away from.

□ In summary, the introduction of blind persons into the field of data processing gives us much to take satisfaction in and much to be proud of. We must, however, work toward the day when the present attitudes and concerns of all levels of management are no longer a problem. From there we must move on to be sure that blind programmers have the same opportunities in supervision and management as others. The success we've had is proof that employment of the blind in data processing is a good, sound business proposition.

From a selfish point of view, there is tremendous public relations value to the company that employs blind persons in data processing. The story of our success has spread far and wide. We have probably received as much favorable publicity on this as any other thing we have done. We regularly get calls from all over the country where others are considering the employment of a blind person. There has also been a positive effect on our own employees. It is one more thing that has given them pride in their company.

Summary

Guidelines for Training Blind Computer Programmers

In drawing up guidelines for the selection, training, and placement of blind persons in computer programming, we ought to look at what to improve in our present activities. To selection, training, and placement, I would like to add a fourth phase, employment. I think it is an essential concept, one that allows us to know that the other three phases are being handled in proper perspective. What the individual blind programmer is actually doing on the job and what he gets into in the way of successes and failures are very important. I will return to this point later.

To improve selection, more emphasis should be given to thorough testing and screening. This has been said before and it will be said again. Perhaps this makes some counselors unhappy, but I wish to remind them that the better the testing and screening, the greater the chance of success for those participating in the total program. There have been some trainees in the past who were marginal and whose acceptance for training was experimental. Such experimentation has been and should continue to be identified as such and be distinguished from the more regular activities of training the blind in programming.

□ Although we do not know what a programmer is or how to test for one very well, we do have some indications. We know that the counselor should screen clients for their employability in intellectual work. This includes mobility, emotional stability, and many other attributes that are pertinent to a man's ability to manage himself in a social and occupational environment. This must include adequate communication and study skills. Programming is intellectual work and its expression is in the form of complex, symbolic, and detailed relationships. Accuracy in these details is paramount. We know that the work is logical and requires imagination and that the programmer must be methodical and motivated. This motivation is most important in the case of the blind person because he must come to work in order to excel, not just to be there. In addition to his motivation, he must have some ability to do the work. Our problem is that we do not know how to identify these abilities with accuracy before the individual is employed and demonstrating his ability by actually doing the job. Nevertheless, the counselor should provide whatever screening and testing that is possible so that the meat grinder of vocational misplacement can be avoided. To do this, the teachers and employers must give the counselors adequate information about what is required for the job of programmer. In turn, the counselor must make sure that the

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Improving selection

Testing and the Qualities of a Good Programmer

This article is based on a paper presented at the Conference on Training the Blind to Program Computers held at Western Michigan University, Kalamazoo, on October 23-25, 1967.

information he provides the school or employer about the trainee is the result of well-considered counseling and screening.

There should be periodic reviews of the curriculum so that it is well directed and practical. The classroom is also a very good setting for the dissemination of information. Although good training is paramount, I wish to emphasize that nearly all of the information concerning the training can be disseminated to the prospective employer in a form that he is most willing to accept.

□ The end product of the training of a blind programmer must be two-fold: an individual who is not only trained but who is armed with very good documentation of the programs which he has written during his training. Included in this documentation should be the problem statement or purpose of the program; background information; program design information such as flow charts; interface descriptions with other parts of a larger system if applicable; program listings; users' and operators' manuals; and sample input and output data for tests. With such documentation, the programmer can make a fairly professional presentation. If it is claimed that there is not enough time in the training session to produce two to six such well-documented programs, then I recommend that the curriculum and schedule be modified to make room for this most important training function, that is, teaching the programmer good techniques of documentation. It must be remembered that the documentation is good when it conveys to the next programmer, user, or operator the information he requires. A programming supervisor conducting a job interview can go a long way in judging the capability of the interviewee and his school by looking at the documentation or the lack of it.

□ In the placement phase, the prime responsibility rests with the employer, followed closely by the responsibility of the blind applicant. Then, in a very complicated way, there comes the separate and joint responsibilities of the teacher, counselor, and, possibly, a resource person. The applicant is the one who is trying to get the job. He is the one who has the talent and skills for hire. In distinguishing between the different types of programming and computer work, we talk about analytic work on the one hand and very simple, routine, nearly clerical work on the other; we go from an analyst to a coder. This is not a linear spectrum, nor is it a simple one, but it will serve for the sake of simplifying the discussion. Using this model, we may observe that the closer a person is to the analyst end of the spectrum, by virtue of his talents and skills, the greater the responsibility he should assume in the interview. The closer the blind applicant is to the technician or coder level, the more assistance the counselor and resource person should provide during the placement phase.

Each blind applicant should be trained in interviewing. Interviewing is not a simple operation. There is a dimension of communication that is lacking when adequate sight on the part of the applicant does not allow him to catch important clues from the interviewer or to transmit them and thus establish a rapport. Using unaccustomed techniques puts the interviewer at a

Reviewing curriculum

Documentation of Work Done in Training

Placement

Training in interviewing

disadvantage and, in some cases, the interviewee, too. One should be looking for advantages. An interviewee who is a high school graduate with 300 to 600 hours of programming training should, therefore, have some training in the techniques of interviewing.

The documentation of the several problems should be stressed to the interviewer or employer as an indication of the potential of the interviewee. I use the word "potential" because, in my opinion, it is not possible in a one-hour interview to obtain enough information about a man to know whether you should hire him or not. At best, one guesses about his capabilities. Fortunately, in ensuing months and years, the supervisor has the opportunity to encourage changes in his performance. A prospective employer is very reluctant to even consider trying to modify performance if, during an interview, he cannot obtain enough information concerning the man's potential. He will consider trying to modify it if he thinks the modifications will be either fairly natural or routine. So, what should be done is to provide him with more data about the competence of the programmer. If the programmer knows what is on each page of the documentation—practically photographed in his mind—then the discussions with the interviewer will be more relaxed and natural.

☐ The teacher, along with the placement counselor, should be responsible for knowing what has transpired during the interviews of the blind programmer and the prospective employer. The teacher should meet with the student to obtain his reaction to the interview. This responsibility cannot be discharged by reading notes made by the counselor, but only by active participation in many such recapitulations of interviews. Many problems can be avoided by having an alert teacher instruct the blind programmer ahead of time. Some of the problems are technical and are the responsibility only of the teacher and the counselor. Although there are many other problems that are in the province of the counselor and the applicant, there is a solid responsibility on the part of the teacher. The teacher who produces a student for the employment marketplace and who finds out nothing about the student's successes in interviewing and in employment is failing. In the particular case of computer programmers, we are not teaching the classics, but vocational training—up-to-date, modern vocational training. The skills must be applied by the graduate. The teacher has the responsibility of finding out how well his instruction has hit the mark for this category of employment.

The teacher and the counselor must follow up the placement by interviews with the blind programmer after he has been employed for some time. This will allow them to feed information into the selection, training, and placement process of blind programmers. Information and data on real, practical problems, not theoretical ones, can thus be obtained. Although each problem has unique circumstances, enough of them will overlap to indicate ways in which the instructor can restructure a few of his topics and possibly give more attention to some special facet of function or technique.

☐ During employment, I feel that there should be some dissemination of information among the blind programmers who are working. In this area of

*The value of documentation
in the interview*

Interview Data as Feedback

Follow up

Dissemination of Information

activity, I think the professional societies can assist. Science for the Blind, Bala Cynwyd, Pennsylvania, records the monthly magazine of the Association for Computing Machinery, "Communications." This magazine presents articles on business data processing and both systems programming and scientific programming. For blind programmers in particular, I have started the "Newsletter for Blind Computer Programmers." This way of getting information around among those who are working helps to solidify the body of knowledge concerning the blind in programming.

Most blind programmers can act as resource personnel for counselors, other blind persons contemplating either training or employment in programming, teachers, and employers. This approach may, in the long run, prove to be the most helpful one in placing blind programmers, because an employer has more confidence that the employment of a blind person is feasible if he learns of one working elsewhere.

Blind programmers as resource personnel

Computer Terminal Adapted To Produce Braille

The Office for Computing Activities at the University of Dayton, Dayton, Ohio, has modified the paper tape punch of a Model 33 Teletype to emboss the raised characters of braille on paper tape. To allow for the extra characters needed for computer operations, a seventh dot was added to the standard braille cell. A specially designed portable code converter employing solid-state integrated circuitry takes the computer code, converts it to braille, and feeds it to the teletypewriter. In operation, the device simultaneously embosses braille on the paper tape and visually prints on the carriage of the teletypewriter in the normal manner.

The devices enable a blind computer programmer entirely unassisted and working in the interactive mode, i.e., typing questions or commands to the computer and receiving answers from it, to compose, enter, debug, call, execute, and modify new and existing programs conveniently from his home or office. Off-line as a stand-alone unit, the modifications permit the teletypewriter to be used as a typewriter that simultaneously produces both braille and print copies, thereby allowing both the blind and sighted user to proofread anything he types.

The implications of immediate braille capability extend far beyond the programmer. The embosser and code converter can be used in the rehabilitation of blind persons as well as in computer-assisted instruction of the blind. The device and information on it are available from the Office for Computing Activities, University of Dayton, Dayton, Ohio 45409.

The Future of Services by State Agencies for the Blind

One of the comfortable things about assuming a prophetic posture and peering into the future is that few people can call you to account, since the events you foresee are still at a distance. Moreover, by the time they occur most people will very likely have forgotten your predictions. Inherent in prophesying, however, is the danger of exaggerating. I shall, therefore, try to relate my remarks as much as possible to present conditions and trends as they may affect work for the blind.

□ Please note that I say "work for the blind" and not "agencies for the blind" since, in my view, "work for the blind" not only includes state agencies for the blind, but goes beyond them. The reason is simple. I consider work for the blind a *specific professional endeavor*. Because work for the blind concerns itself with the delivery of services that all disabled or disadvantaged individuals need, it is somehow assumed by the uninformed or the individual with an ax to grind that there should be no separate service agency or program for the blind. The fact is that the opposite is true. I am a firm believer in the rightness of history. Work for the blind would not have evolved as a separate entity if there was not a need for it to do so. Present conditions and realities have not changed this need.

One of the misconceptions of our day is that employment for the handicapped consists of special placement techniques that can apply equally to all kinds and degrees of handicapping conditions. Nothing could be further from the truth. A general rehabilitation agency can send a one-armed or one-legged man to an employment service to find a job; you cannot send the average blind person there. At least two problems are immediately involved: the problem of mobility for the client and the problem of employer confidence in blind people. This is why agencies for the blind use a demonstration technique in selling blind labor and deal with the policy problems that are worrying the employer when he hires a blind person.

□ This misconception, which I choose to call the "umbrella fallacy," is widespread and insidious. It follows the pattern of saying that any rehabilitation center, any social service program, or any education program geared for general handicapping conditions can also serve the blind. This is a half truth. Only some can serve the blind *provided* they have trained individuals and programs geared to serve the blind. Have you ever sent a blind person to a sighted class for training in touch typing? What an abysmal failure! You could train the teacher, if there were time, to have insight into the techniques

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Work for the Blind

A misconception about placement services

The "Umbrella Fallacy"

This article was originally presented as a paper at the convention of the National Rehabilitation Association, New York City, November 3, 1969.

required to teach the blind person, but he sees so few blind people that we are better off setting up a special class that has a knowledgeable instructor who will have our client succeed. *We do not have separate classes because we favor segregation but because it is the basic system that works.*

Some of our leadership have even been taken in and have advocated that social work is the end-all and cure-all of services to blind people. Specialists in work for the blind, they say, have outlived their usefulness and are merely perpetuating unnecessary agencies. Social workers advising on service programs for the blind have shown no new direction or success except in one area: they have helped the field of work for the blind to understand that there has been a thriving paternalism in some agencies for the blind which simply can not be tolerated. This is the day when the consumer speaks out. Blind people as clients have as much right as any others to speak out in behalf of their own destiny. We must break internal binds as well as external ones. The independence of the blind individual cannot be won except by recognizing his right to independence. What does this mean to the future of work for the blind and its agencies?

□ 1. *The Comprehensive Agency.* The separate state agency for the blind is essential for success in working with blind people. Combining with welfare, or education, or general rehabilitation agencies merely follows the "umbrella fallacy," that things that look alike are alike.

Please note that in those situations where agencies for the blind have combined with general agencies, the specialized service to the blind has been substantially retained as a bureau or division. The change has merely been a matter of administrative convenience. There have been no strong financial economies to the state that I am aware of. There have, however, been disadvantages to blind people and their needs. Generally, such "bureaus" of the blind are locked in. Their ability to be creative and to expand services are frequently limited by another layer of government and by fiscal priorities *inside* the agency. With fewer resources they cannot but help serve blind people less well.

The administrator of the general agency—whatever its character—must give most of his time and attention to his largest obligations. In this setting the priority rating of numbers dominate and blind people as a minority are bound to lose. Note what happened with the National Institute of Neurological Disease and Blindness. What troubles me most is that the leadership momentum that specialization in work for the blind has accomplished through the years will be lost and instead those unique developments now beginning to be copied by other disabled groups will cease to exist. As I see it, this is the path to mediocrity.

The combined agency then is an administrative convenience. It is not integration of services. It is not better services to people. Actually it segregates and pushes work for the blind into a corner of bureaucracy and underachievement.

□ 2. *Crosscurrents.* There are two different currents in present day state practice where agencies for the blind are concerned. One has been in the

The role of the consumer

The Comprehensive Agency

Blind people have a low priority in a general agency

Crosscurrents

direction of combining the agency for the blind with the general rehabilitation agency and the other has been diametrically opposite—creating a separate commission for the blind. This would seem to indicate that there is a lack of reasoned policy to guide legislators and governors who decide these matters.

In general, it can be said that the trend toward combining agencies is a trend of the times in governmental practice. It is also prompted by weaknesses in the local agency for the blind. The agency may be too small; it may be poorly or unimaginatively managed; it may have poor relations with the consumers of service—its clients; it may be too paternalistic; it may not have quality services. We cannot escape our responsibilities in these areas. One of the great needs in work for the blind is the development of leadership not only for the now but in the years to come. To this end, specific efforts should be addressed to the recruitment into the field of talented people who can grow with the agency into areas of increasing responsibility. I consider this to be a specific and primary obligation of directors of agencies for the blind.

In a larger sense all work for the blind suffers when one agency fails. This has long been characteristic of blind people. One blind person's failure on a job or in a social setting reflects on all blind people and the general public forms its judgments along those lines. It is perhaps for this reason that in work for the blind, agencies are more closely bound up with each other. It is the reason why each of us succeeds with an individual state's success and fails with its failures. If we are to remain the specialized professional service that we are, we must be fully aware of this. Our leadership must speak out concerning this and we must help ourselves. The National Accreditation Council for Agencies Serving the Blind and Visually Handicapped is an important step in this direction. It must be supported and nurtured. We are well ahead of general rehabilitation and social service agencies in this respect.

The National Council of State Agencies for the Blind, the American Association of Workers for the Blind, and the National Rehabilitation Association must not be debating societies; they must exert leadership in urging and developing quality programs in work for the blind. And I believe that, politically, the strong separate agency for the blind can do much to assist the national rehabilitation movement in this country. The national rehabilitation movement needs as broad a base as it can command, and citizen boards or commissions for the blind and other agencies represent an important area of knowledge and persuasion in the interest of rehabilitation needs.

□ Services for the blind have been combined into a single commission or a single state agency when there have been enough people who wanted it. This is the age of the consumer in services to people. State leaders and the consumer must speak out. The integration of all services to blind and visually handicapped people is a must of our times and a highly salable commodity. Why should services to blind people be fragmented? Why should

Agency weakness is a contributing factor

Success and failure of agencies

Strong leadership is needed

Integrating All the Services for the Blind

services vocational rehabilitation be in one agency and social services in another? Or home teaching and prevention of blindness in still others? I have been able to find only two reasons for this: administrative convenience and poor performance. Only the latter has any justification and this can be remedied without changing administrative structure.

Strange as it may seem, the recent legislative recommendations by the federal government dealing with manpower programs is bringing home the problem of agencies for the blind to general rehabilitation agencies. The question is being raised whether general rehabilitation agencies are too small and manpower efforts too fragmented. The administration is recommending that all existing manpower efforts be combined into one comprehensive state manpower agency which would include the state employment service, the unemployment compensation agencies, agencies engaged in manpower training of the disadvantaged, and other agencies authorized by state law to administer manpower programs whether or not they receive federal grants-in-aid. Apparently, such a state comprehensive manpower agency *may* include programs administered under the Vocational Education Act or the Vocational Rehabilitation Act.

One again the "umbrella fallacy" rears its head. Even the federal government is not immune to the misconception that things that look alike are alike. While vocational rehabilitation may be said to look like a manpower program, it is basically different. Manpower programs need to be short-term, mass programs designed for economic efficiency in correcting social inequities with the disadvantaged and the so-called poor. Vocational rehabilitation is for individuals with more substantial handicaps. The client must receive comprehensive, *individual* attention rather than mass attention or it will fail. Ample evidence of this is available. Thus, the conflict and cross-currents in work for the blind have come home to roost among general rehabilitation agencies. Hopefully, they will now understand us better. But whether they do or not, it seems to me that the future of services to the blind requires:

☐ 1. That organized work for the blind strongly support a general state vocational rehabilitation agency, but a separate agency for the blind.

2. That we make this position known to our legislative representatives by formal resolutions from our associations and through personal contact.

3. That work for the blind be a system of service separate from other systems, not a part of health, welfare, manpower, or education.

4. That agencies for the blind be comprehensive and not fragmented. They cannot merely be home teaching units or vocational rehabilitation bureaus. The handicap of blindness is so burdensome and demanding that only the comprehensive impact of quality services to all blind persons, and not merely selected classes, can be a reasonable goal if we are to be effective. This is in keeping with current trends of emphasizing human service to all disadvantaged people. And surely the blind are not less disadvantaged than other groups.

5. That *all* of the comprehensive array of services supplied by agencies

Manpower programs

Manpower versus vocational rehabilitation

Requirements for the Future

Comprehensive, not fragmented services

for the blind be part of the federal grant-in-aid process; that they receive federal matching funds just as current and future programs for socially disadvantaged individuals do. This would mean federally-mandated matching funds for home teaching, services to blind children, prevention of blindness functions, etc.

6. That duplication be avoided. That agencies for the blind, as they develop and assume the comprehensive agency role, use existing traditional service systems and existing facilities that can deliver portions of the service needs of the blind person. These will necessarily vary from state to state depending upon what is available. The state agency has the responsibility for providing or securing those specialized services needed for vocational rehabilitation, home teaching, mobility, work evaluation and training, education, social service, and prevention of blindness. It has the residual responsibility of developing these within the agency or outside of it when the service either does not exist in the state or is of poor quality.

Duplication to be avoided

7. That the ideal administrative arrangement for effective service is the commission or similar comprehensive agency for the blind having a director who is responsible to the governor or a major department of government headed by a commissioner or secretary. If there are other secondary layers of government between these, it should be considered a poor arrangement for meeting the needs of the blind.

The Café des Aveugles Mentioned in Recent Book on Cuisine

"In the basement and running under the Café Lemblin was the Café des Aveugles, launched during the Revolution and at first frequented by the *sans-culottes*. It was probably this café which bore the inscription: 'Here we are proud to call ourselves "citizen," we call each other *tu*, and we smoke.' Divided into 20 little decorated cellars, it was frequented by very mixed company and included the obliging of both sexes. The orchestra of four players was blind; they had been trained at the Quinze-Vingt and played the violin, the clarinet, the flute, and the bass. One woman simply blew into the French horn. The blindness of the musicians was an advantage as they could not witness the goings-on on these premises forbidden to 'under-eighties,' a peculiar mixture of the curious, prostitutes, pimps, and provincials. The Café des Aveugles closed its doors in 1867."

Quoted from *Gastronomy in France* by Raymond Oliver, translated by Claude Durrell. New York: The Wine and Food Society in association with World Publishing Co., 1967, page 253.

From the Field

From the Field is a continuing series of reports from the American Foundation for the Blind's specialists and regional consultants on new ideas and practices they have come across in their travels. This report is by Carl T. Rodgers, AFB's specialist in education (braille and tactual aids).

Computer-Generated Braille

Participants at the Spring Regional Meeting of the National Braille Association (held in Atlanta on May 18-20, 1970) were given the opportunity to examine the IBM computer and braille-printer which is currently in use in the Atlantic public schools. A four-page version of the program of the meeting was prepared on this equipment and was used as a basis for evaluating braille so produced.

Although the standard braille sheet measures 11 by 11½ inches (allowing for 38 braille cells per line with a 1¾-inch left margin for binding and a ¼-inch right margin), the sheet produced by the computer and braille-printer is 11 by 15 inches. The left margin is the standard 1¾ inches, but the right margin of 4¼ inches seems excessive. No line of writing contained more than 36 braille cells. The height of the dots was on the order of 0.005 inches. These low dots can probably be read easily by younger students, but such braille is highly expendable.

The accuracy of the braille was comparable to that produced by a transcriber. The few errors in braille usage obviously reflected a lack of knowledge of braille on the part of the computer programmer, rather than any deficits in the production capabilities of the computer itself or of the braille-printer.

Including the Blind in Audition Committees

In a workshop on recordings, the point was made that committees responsible for reviewing the audition tapes of individuals wishing to do recordings for the blind should include a number of blind persons. It was felt that blind listeners can detect certain undesirable voice qualities and tonal attitudes that remain unnoticed by sighted listeners. Among the reading traits mentioned were reading too slowly; rapid, but stumbling reading; poor diction; a condescending tone of voice; and inflections which distort the meaning of the author.

The point was also made that in recruiting readers for material in foreign languages, the educational background of the reader is just as important as his knowledge of the language or his country of origin. This is especially important if the material is of a technical nature.

Raised Line Drawings

The participants in the workshop on raised line drawings examined two embossed illustrations as a basis for discussion. One was a diagrammatical display of a chess game, including a key of symbols for the pieces and illustrations of the possible moves each can make. The display was intended for the use of a blind person in learning to play chess. This highly visual approach in teaching persons who do not see has a most serious drawback. The indication of real objects, in this case chess pieces, by arbitrary symbols not only fails to communicate any impression of the object itself, but taxes the attention and mem-

ory of the blind person beyond the possibility of any real learning.

On the other hand, the second example, a map of Florida, the Florida Keys, and the Greater and Lesser Antilles, was more suitable and there was nothing to bewilder the observer's tactual or kinesthetic examination of the map surface. The meaningful interpretation of this display did not involve any of the elements of perspective (which is exclusively a phenomenon of vision); further, its size and absence of clutter were appropriate for the sense of touch.

Since the reduction of visual displays into embossed form is laborious, time-consuming, and taxing on the transcriber's judgment, it was agreed that duplication of displays that are already in embossed form should be strictly avoided. Unfortunately, no manual for producing raised line drawings for use by transcribers seems to exist. Tactographic techniques, however, have been adequately described by Weidel and Groves (University of Maryland), Emerson Foulke (University of Louisville), Jasha Levi (Recording for the Blind), and others.

In editing for embossing purposes, two very important principles are "simplify" and "enlarge." To simplify is to include only the essential parts of a drawing in the embossed version. To enlarge is to increase the scale of the drawing to provide for good tactual resolution. A transcriber's note should include the scale of the embossed drawing and the magnification of the original used in preparing it. Enlarging should not extend a drawing beyond the limits of the standard 11-by-11½-inch braille page. The height of the raised lines must also be limited so that the braille book will close properly. The recom-

mended line height seems to be on the order of one-quarter inch.

Volunteer transcribers are often amazingly resourceful in improvising solutions to problems in embossing. For example, some have learned to "dehumidify" braille paper (when atmospheric humidity has rendered it

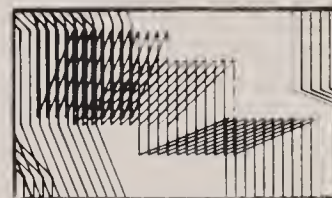
unsuitable for embossing) by placing it in a pre-warmed, but turned off, oven or under a heating pad. They can also be quite flexible, often putting the needs of those they serve ahead of "the established standard."

Transcribers expect to receive instructions from the individual class-

room teachers about what material and drawings are required for the blind students. In fact, the teacher's cooperation with the transcriber is essential if blind students are to get the benefit of adequate instructional materials.

Answers to Accreditation Questions

National Accreditation Council for Agencies Serving the Blind and Visually Handicapped



Q. Our agency is experimenting with aides to do some parts of jobs which, in your standards, call for professionals. Does this mean we could not be accredited or would be advised to stop this practice?

A. NAC encourages experimentation. Experiments in staffing patterns, in other fields, for example, have been highly successful in identifying parts of professional jobs that could be delegated to para-professionals. Your agency could make a significant contribution to our field's manpower needs by determining where and how para-professionals can be effectively used. To make such a determination, of course, your experiment should be properly designed to compare the respective roles of professionals and para-professionals and should include, after a stated time, assessment of the results. Such research can be very helpful not only in your own operation but to the entire field, as you share your experience.

Q. What advantages could an agency expect to obtain by being accredited through NAC?

A. Agencies that have been accredited report the following advantages:

1. The self-study, required for accreditation, is extremely helpful to agency executives and staff as well as boards and commissions. The study committees build

esprit de corps and improve working relationships within the agency. The study also provides an opportunity to take a fresh look at the agency's operations. Asking why things are done as they are stimulates ideas for improvement.

2. The visit of the on-site review team provides the agency with a valuable evaluation by their peers in the field. The team's written report helps sharpen the agency's own perceptions about its strengths and weaknesses and provides new insights and encouragement to make improvements.

The fact that members of on-site teams volunteer their time and professional expertise adds an extra dimension of objectivity to their evaluations. The exchange of professional thinking by agency staff and team members is mutually beneficial.

3. The accreditation process often highlights needs that the agency has long noted but has not been able to meet due to lack of support. The report of an outside group of peers, made in the light of recognized standards of operation, has often convinced governing boards to give high priority to needed improvements and to uncover sources of income.

4. Accreditation is a help in recruiting good staff members; most qualified professionals prefer to work for agencies that are recognized as meeting nationally accepted standards.

5. Accreditation assures community

planning groups that your agency has demonstrated its basic soundness to a national organization devoted to improving services for the blind. Thus an accredited agency can be assumed to be worthy of inclusion in community plans for supplying and funding such services.

6. Under federal regulations, accreditation is accepted by federal and state agencies disbursing federal public assistance funds as evidence that your agency meets standards of eligibility to receive contracts for services.

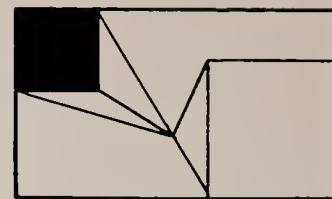
7. The Council of State Administrators of Vocational Rehabilitation has voted to make accreditation a requirement, within a stated period, for agencies receiving state contracts for service.

8. As information about accreditation is spread to the general public, donors can be expected to look for the symbol of accreditation and give to agencies that display it.

9. Several united funds already have indicated that they will expect agencies that they support to qualify for accreditation. The National Budget and Consultation Committee is encouraging all united funds to do so.

What is your question about accreditation? Send it to the National Accreditation Council, Suite 1406, 79 Madison Avenue, New York, N.Y. 10016. If it is of general interest, we will try to answer it in this column, but you will in any case receive a direct, prompt reply.

Letter to the Editor



Dear Editor:

In reference to your news item on the "blind-made" products in New York (*New Outlook*, News in Brief, June 1970, p. 198), it seems that all of the firms that were unable to receive certification by the New York State Commission for the Blind and Visually Handicapped under General Business Law No. 369F have stopped their door-to-door sales and have now resorted to telephone soliciting to sell their products. I have received many telephone calls from housewives who have been

taken in by these telephone solicitors and their plea to "help the poor blind."

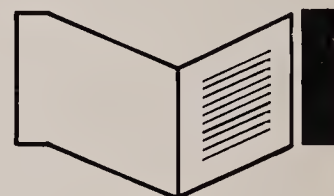
To date we have uncovered three of these firms that are soliciting illegally in Westchester County and we are in the process of investigation in order to prosecute. It is a shame the way the public is taken in by these unscrupulous people in the name of the blind.

If it is this bad in Westchester County, I can well imagine that it must be worse in New York City. It might be well to advise your readers of this situation so that they can warn their

friends and neighbors not to accept any article as "blind-made" unless it bears a tag or is stamped as certified by the State Commission and bears a registration number. At present there are 25 firms and individuals registered and approved by the New York State Commission.

Charles C. Taylor
Chairman, New York State
Commission for the Blind
and Visually Handicapped

Current Literature



Play... A Way to Help Realize the Potential of Sightless Children, by Mrs. Page Lawson. *Therapeutic Recreation Journal* (National Therapeutic Recreation Society, 1700 Pennsylvania Avenue, N. W., Washington, D. C. 20006), Vol. 3, No. 2, 1969, pp. 31-33. Mrs. Lawson is supervisor of pre-school education at the Harris County Lighthouse for the Blind in Houston, Texas.

Some Aspects of the Employment and Social Life of Young Blind People in the Midlands, by J. N. Langdon. *The New Beacon* (Royal National Institute

for the Blind, 224 Great Portland Street, London WIN 6AA, England), Vol. 54, No. 637, May 1970, pp. 114-21. A study of the reported experiences of older teenagers and young adults based upon a large number of interviews with blind individuals and their parents.

Some Thoughts on the Provision of Services for the Blind in the Seventies, by J. Alfred Leonard. *The New Beacon* (see address above), Vol. 54, No. 638, June 1970, pp. 142-46. Dr. Leonard

is at the Blind Mobility Research Institute, Department of Psychology, University of Nottingham in England.

The Role of the Specialized Agency in the Rehabilitation of Blind Persons, by Peter J. Salmon. *Journal of Rehabilitation* (National Rehabilitation Association, 1522 K Street, N. W., Washington, D. C. 20005), Vol. 36, No. 4, July-August 1970, pp. 11-13. Article is based on a position paper prepared by Dr. Salmon for use in New York State-wide Planning.

What Constitutes Blindness? Part II—Psychology, by R. L. Warren. *Journal of the American Optometric Association* (7000 Chappewa Street, St. Louis, Missouri 63119), Vol. 40, No. 11, November 1969, pp. 1116-20. Some practical viewpoints on the psychological handling of low vision patients.

Progress and Projection of the Stanford Blind Reading Aid, by John G. Linvill. *The Seer* (Pennsylvania Association for the Blind, 2843 N. Front Street, Harrisburg, Pennsylvania 17110), Vol. 41, No. 2, June 1970, pp. 11-13. Short report, as of November 1969, on the Optacon, an optical-to-tactile converter to make reading material of the sighted directly usable by the blind.

Oerwood Braille Trail, by James J. Brett. *The Seer* (see address above), Vol. 41, No. 2, June 1970, pp. 7-10. The new Oerwood nature trail has been patterned after the Roaring Fork Braille Trail in Aspen, Colorado.

Beginning a Transcribing Group by Florence Grannis. *The Braille Monitor* (National Federation of the Blind, 2652 Shasta Road, Berkeley, California), June 1970, pp. 684-703. An outline of useful procedures for volunteer transcribers who are involved in taping, large typing, and braille material for the blind and the partially sighted.

The Return of the Exile, by Manuel Urena. *The Braille Monitor* (see address above), July 1970, pp. 22-32. The author, who is himself blind, discusses various stereotyped attitudes held by the sighted to the detriment of the blind.

Service and Servitude in the Sheltered Workshop, by Carl Gersuny and Mark Lefton. *Social Work* (National Association of Social Workers, 49 Sheridan Avenue, Albany, New York 12210), Vol. 15, No. 3, July 1970, pp. 74-81. The authors contend that the broad scope of agency intervention in clients' lives and the refusal of agencies to bargain collec-

tively with their clients makes for an element of "servitude." They present evidence for their theory through an examination of the literature by and about sheltered workshops and through a special survey of agency personnel.

Brain Dysfunction in Blind Children, by Victor H. Vaughan. *The Educator* (International Council of Educators of Blind Youth, Perkins School for the Blind, Watertown, Massachusetts 02172), Vol. 3, No. 2, June 1970, pp. 1-3. A short discussion of two aspects of behavior found in children with brain dysfunction—distractibility and hyperkinesis.

Library Services for the Visually Handicapped in the 1970's, by D. E. Schauder. *Imfama* (South Africa National Council for the Blind, Reinet Building, 5th Floor, Andries Street, Pretoria, South Africa), Vol. 10, No. 2, April 1970, pp. 2-7, 11. History of and future projections for library services in South Africa, by the director of the South African Library for the Blind.

David Katz's Der Aufbau der Tastwelt (The World of Touch): A Synopsis, by Lester E. Krueger. *Perception & Psychophysics* (Psychonomic Journals, 1200 West 34th Street, Austin, Texas 78705), Vol. 7, No. 6, June 1970, pp. 337-41. Katz's book, written in 1925, has never been translated into English. Dr. Krueger presents highlights of Katz's research concerning modes of touch, vibration sense, and temperature sense.

—M.M.R.

Additional Listings

The Exceptional Parent, a new magazine for the parents of children with disabilities, began publication in September 1970. Founded and edited by Drs. Lewis Klebanoff, Stanley Klein, and Maxwell Schleifer, all practicing psychologists and university professors, the magazine is published 10 times a year by the Psy-Ed Corporation. Annual subscriptions are \$6.00. Further infor-

mation is available from The Exceptional Parent, Box 45, Newtonville, Massachusetts 02160.

Equipment for the Disabled. National Fund for Research Into Crippling Diseases (United Kingdom). This four-volume list of more than 700 pieces of equipment and adaptations includes full descriptions and illustrations. Many of the items could easily be made and for these, details of materials and dimensions are also given. This second edition is both a revision and an enlargement of the 1960 edition. It is available from Rehabilitation International (219 East 44th Street, New York, N.Y. 10017) at \$20.00 per set. Also available are "Writing and Reading Aids for the Paralyzed" and "Gardening for the Disabled" (each \$1.40 per copy).

Two new publications of the Council on Social Work Education (345 East 46th Street, New York, N.Y. 10017), both edited by Harry A. Schatz, are **Social Work Administration: A Resource Book** (#69-650-06, @ \$6.00) and **A Casebook in Social Work Administration** (#70-650-08, @ \$4.00).

A new recorded magazine for young blind people is being planned for publication in mid-1971 by Dialogue Publications, Inc. (3100 Oak Park Avenue, Berwyn, Illinois 60402). Aimed specifically at those of high school and college age, this as yet untitled periodical will take a mature approach to problems of blind persons facing a life of competition with their sighted peers in social as well as economic activities. Features will include on-the-spot accounts of blind and deaf-blind persons engaged in productive employment, entertainment sections, and an interchange of ideas and comments by the magazine's young readers, whenever possible, in their own voices. Cost of production, expediency, and availability of equipment will determine whether the new magazine will be recorded on discs, cassettes, or open-reel tapes.



■ James Laurence Caldwell, 33, of Silver Spring, Maryland, was selected as the 50th Anniversary Rehabilitant by the Rehabilitation Services Administration, U.S. Department of Health, Education, and Welfare. Mr. Caldwell, who is totally blind and paralyzed below the waist, was honored at ceremonies held June 11, 1970, in Washington, D.C., to commemorate the 50th anniversary of the Vocational Rehabilitation Act and the 2½ million disabled individuals who have been rehabilitated since 1920.

Following a home accident in 1962, Mr. Caldwell spent four years in a program of treatment and vocational training with the Maryland Division of Vocational Rehabilitation. A mechanical engineer before his accident, he decided to study computer science as a new occupation. In 1966, he was hired by the Chesapeake and Potomac Telephone Company as a staff associate in its Data Processing Center. With the aid of a grant from the Social Security Administration, a hydraulic lift (necessary to allow him access to the building) was designed and built (with Caldwell's assistance) and he was able to accept the job.

■ Beginning in 1971, annual awards for outstanding journalism will be given to agencies for the blind by Dialogue Publications, Inc., Berwyn, Illinois, publishers of *Dialogue Magazine*. The awards will be given for best bulletin, best press release program, best single article, and best promotional piece. Further details about the competition are available from Dialogue, 3100 South Oak Park Avenue, Berwyn, Illinois 60402.

■ Frederick Picard, a veteran U.S. diplomat, has been named executive director of the Catholic Guild for All the Blind, Newton, Massachusetts, succeeding The Rev. Thomas J. Carroll. Mr. Picard, who assumed his new post August 1, helped to establish relief programs for victims of the Nigerian Civil War, served with the Middle East Task Force during the Arab-Israeli War of June 1967, and was deputy director of the White House Conference on International Cooperation in 1965. He has also held diplomatic posts in Zanzibar, Iran, and Rhodesia.

■ Arthur S. Flemming, former secretary of the U.S. Department of Health, Education, and Welfare (1958-61), has been named chairman of the 28-member National Advisory Committee of "distinguished older Americans" for the 1971 White House Conference on Aging. Dr. Flemming was responsible for carrying out President Eisenhower's directive to convene the first White House Conference on Aging in January 1961. Among the other members of the advisory committee are General Lucius Du B. Clay, Milton S. Eisenhower, Duke Ellington, George Meany, Mary E. Switzer, and Earl Warren.

■ In August, the American Bible Society, New York City, presented an album of the first Scripture recorded on cassette tapes to the Library of Congress. Presenting the cassette edition of the New Testament in Today's English Version (popularly known as "Good News for Modern Man") was the Rev. Dr. Dale C. Recker, ABS's secretary of blind work. The gift was accepted by Robert Bray, chief of the Library's Division for the Blind and Physically

Handicapped. The recording is on 15 pocket-size cassette tapes, each 60 or 90 minutes in length and was read by the late Bud Collyer, the television personality.

■ Experts in transportation will devise new ways of pinpointing what happens to local transit systems as a result of lower fares for special groups such as elderly citizens through a six-month, \$18,000 project being jointly supported by the Social and Rehabilitation Service's Administration on Aging and the Department of Transportation's Urban Mass Transportation Administration. The Transportation Center at Northwestern University, Evanston, Illinois, will conduct the project. Edward K. Morlock, associate professor of civil engineering at Northwestern, is the director of the project.

■ Paul J. Langan, New York City, has been appointed director of the Personnel and Training Service of the American Foundation for the Blind. Mr. Langan has, for the past 14 years, been with the American Foundation for Overseas Blind, whose main office is in New York City. He has served AFOB in a variety of capacities, including assignments in Paris and Beirut. He has also been associated with the Kentucky School for the Blind, the Kentucky Workshop for the Blind, and the Maryland School for the Blind.

The AFB Personnel and Training Service actively recruits professional personnel in education, rehabilitation, and social welfare for the field of work for the blind by maintaining a national job clearing house service and by organizing and conducting training institutes.

Coming Events

November 4-7 National Easter Seal Society for Crippled Children and Adults, Annual Convention, Chicago.

November 7-13 American Occupational Therapy Association, New York City.

November 19 National Society for the Prevention of Blindness, Annual Meeting, New York City.

December 1-5 Special Education Media Conference, Council for Exceptional Children, San Antonio.

December 13-18 White House Conference on Children, Washington, D.C.

1971

February White House Conference on Youth, Washington, D.C.

March 17-20 Association for Children With Learning Disabilities, Annual Conference, Miami Beach.

April 18-24 Council for Exceptional Children, 49th Annual International Convention, Miami Beach.

April 30 National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Annual Meeting, Atlanta.

May 9-12 International Association of Rehabilitation Facilities, Las Vegas.

May 16-21 National Conference on Social Welfare, Annual Meeting, Dallas.

May 17-20 National Braille Association, 11th National Conference, Chicago.

June 6-10 Special Libraries Association, San Francisco.

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B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales	0	0
2. Mail subscriptions	2455	2682
C. Total paid circulation	2455	2682
D. Free distribution by mail, carrier, or other means	404	375
E. Total distribution	2859	3057
F. Office use, leftover, unaccounted for, spoiled after printing	557	54
G. Total	3416	3111

I certify that the statements made by me above are correct and complete.

(Signed) Patricia S. Smith, Managing Editor

Sensi-Quik

The Touch Cane for Walking
Faster with Safety

The New Fiber-Glass Cane

Sensi-Quik's shaft is made of large diameter, tapered tubular fiber-glass with gleaming white pebble finish, and has a bright red band at its tip. The smart-looking contour handle is of black vinyl. The 1/2-inch diameter, diamond-hard, tungsten-carbide working tip resists wear, and produces sharp, useful touch information. The cane is put together with epoxy, as fiber-glass golf clubs are, to withstand repeated sudden impacts.

The Sensi-Quik fiber-glass model comes with either crook or contour handle and either carbide or replacement steel tip. Sensi-Quik is also available in high-strength, nickel-plated, steel shafts recommended for 50- to 60-inch canes when extra strength is desired. The steel shaft adds three to four ounces to the weight of the cane.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact



Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

Franklin S. Clark
The Go-Sees
166 East 92nd Street
New York, N.Y. 10028

THE NEW Outlook FOR THE BLIND

December 1970 Volume 64 Number 10

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M. Robert Barnett

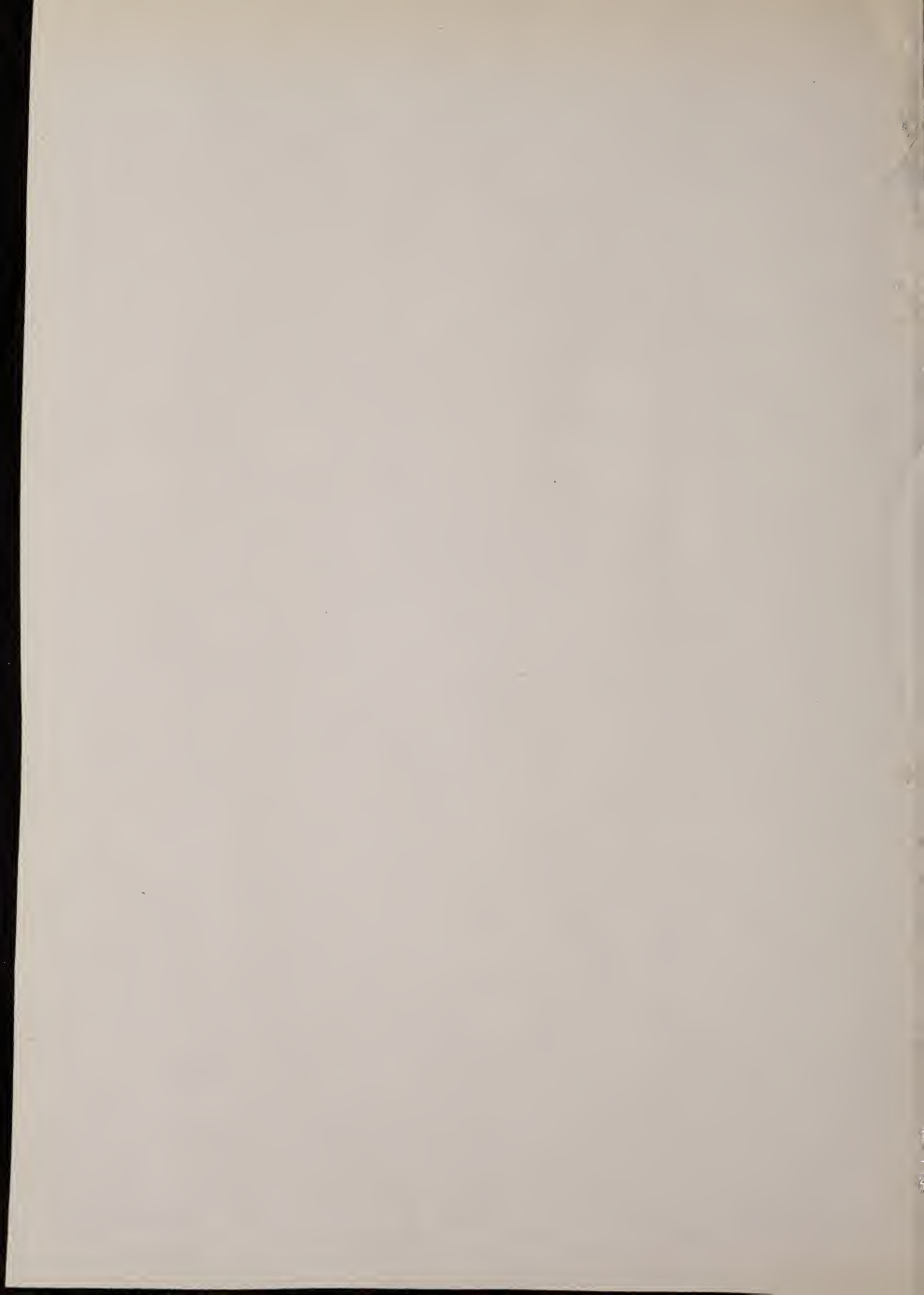
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An Early Childhood Education Program for Deaf-Blind Children

The Michigan School for the Blind has had a program of adjustment, orientation, and education for deaf-blind youth of school age since 1949. The national rubella epidemic of 1964-65 resulted in the birth of great numbers of these children with multiple handicaps, thus creating an increased demand for information, guidance, and instruction to the families and to the children at a much earlier age. With this need in mind, the school planned its first annual institute for rubella children and their parents in the spring of 1967. This was a small meeting with only four children and parents present. A similar institute was held the following year with increased interest and participation on a state-wide basis. Fourteen children, their parents, social workers, teachers, consultants, and nurses were in attendance. The purpose of the all-day meeting was to develop better insights and understanding of the overwhelming needs of rubella children in the areas of physical, mental, emotional, and social development and to examine a realistic training program for the future. Demonstrations, discussions, movies, and individual problems encountered in the areas mentioned were woven into the meetings.

□ As a result of these parent institutes, the Michigan School for the Blind recognized the need to provide continuous training for local rubella children who could be visited in their homes with a minimum of travel time. Thus two teachers began making weekly visits to three Lansing area children who were under the age of three years. During these calls, the parents not only observed the teacher working with the young deaf-blind children, but also were given encouragement, suggestions, guidance, and counseling on the needs of their children. These weekly visits were made until the end of the school year. For six weeks during the summer, these parents brought the children to the school twice a week in an effort to continue the same training outside the home environment. In September of the 1968-69 school year, these youngsters were enrolled in the deaf-blind department as day students along with two other three-and-a-half-year-olds who had had some assistance in early childhood education in their local school district. The latter enrolled as residential students, making a total of five young deaf-blind children in our early childhood education program.

As requests for services were being received from every part of the state, it became apparent that a survey was necessary for the purpose of locating and identifying rubella children. The Michigan School for the Blind, in cooperation with the Michigan Department of Public Health and the Michigan State Medical Society, undertook this task during the late winter and spring months of 1968. Questionnaires were cooperatively sent to 7,600 member physicians of the Michigan State Medical Society. A total of 580 replies to

VIRGINIA WIEHN

Miss Wiehn is an intern consultant and supervising teacher of the deaf-blind department at the Michigan School for the Blind, Lansing.

After Institutes, Home Visits Were Made

7,600 physicians were surveyed

the questionnaire were received with 30 physicians reporting children with vision and hearing handicaps. Personal contact was made with those physicians reporting children having visual and auditory losses. As a result of the follow-up, there were a small number of these children who did not have the dual handicaps. During the summer, the author traveled throughout the state contacting local agencies and visiting the children who had been reported in the survey. During these visitations the children were observed and participated in planned activities in an effort to determine their developmental level and readiness for school. Literature, materials, and toys were left with families where needed. The entire family was counseled on the importance of working with the child and the need for consistent training and discipline was reinforced. These parents were also invited to attend the annual Parent Institute for Deaf-Blind Children which would be held in the spring of 1969. At the institute, the plans for a new summer program were presented and parents were urged to take advantage of this educational opportunity for their children.

□ This special six-week summer program for parents, siblings between the ages of seven and 16 years, and the pre-school deaf-blind children was made possible by a federal grant under Title 1. There were no charges made for the program or for the use of facilities. The families were housed in a self-contained cottage on the campus and were assisted in the care of their children by houseparents and aides. All activities were under the guidance and direction of trained staff members. A total of 13 families attended during the six-week period. With the exception of one, all of the youngsters were rubella babies. Three Lansing area children who had been enrolled in the deaf-blind department the preceding year also participated in this program and were transported by taxicabs each day.

The program had a three-fold purpose: (1) to determine the present level of development and readiness of each child; (2) to instruct the parents and other family members on methods of stimulating further development; and (3) to make specific recommendations for each individual child.

The staff included two teachers, two housemothers, three aides, the school psychologist, a nurse, and other ancillary staff. Each family arrived on Sunday and remained until the following Friday afternoon. The children ranged in chronological age from three years, two months to four years, 11 months. Their social maturity level, as measured on the Maxfield-Buchholz Scale of Social Maturity, ranged from five months to two years, two months. One child was totally blind while the others had a minimum of object perception or various degrees of useful vision with or without correction. Although all children vocalized to some extent, none had any recognizable speech patterns. Hearing tests had been given to all beforehand and seven, with hearing losses varying from moderate to severe, wore individual hearing aids. It was felt that one child had hearing in the normal range. All were retarded in motor development, four were severely retarded and did not walk, while five had minor heart involvement of various types. The psychological and mental ability levels of these youngsters could not be definitely determined.

Six-Week Summer Program for Whole Family

The staff and the characteristics of the children

The activities of the program consisted of the following: (1) Motor and body movements (walking, climbing, pushing, pulling, picking up and carrying an object, riding a tricycle, log rolling, and somersaulting); (2) Introduction to the enjoyment of a physical activity such as teetering, riding the hobby horse, sliding on the slide, rolling a ball, swinging, etc.; (3) Interest and desire to play with colorful toys and objects that came apart, moved, or made a musical sound; (4) Use of gross sounds (cow bell, cymbals, bass drum, piano, record player, xylophone, etc.) to see if the child displayed any interest in these sounds or made any observable reaction to them; (5) Vocalizing and imitating their babbling sounds, using vibration when accepted without too much resistance; (6) Daily water play in either a small plastic pool or a large indoor pool; (7) Eating table foods, finger foods, drinking from a glass, holding glass, and using spoon; and (8) Toilet training which included pulling pants up and down, sitting on potty, and cooperating in washing and drying hands.

Activities for the children

During the first three days of the week the parents observed the staff working with their child. For the remainder of the week, the teachers observed the parents and siblings caring and working with their child and offered helpful advice and guidance when needed. By the end of the week most of the parents were usually more relaxed and displayed increased self-confidence in the management and training of their children. Counseling sessions and group discussions were arranged for the parents in order to further their understanding of the needs of deaf-blind children and to acquaint them with the facilities of the school.

Family involvement

Throughout the week recreational activities (picnics, swimming, shopping, visits to local points of interest including the Capitol Building, the Oldsmobile factory, and Michigan State University) were provided for the family. An aide was employed to plan activities for the older brothers and sisters during the day and to accompany them on special outings when they were not involved with their handicapped sibling.

The following summaries and reports were kept on each child: (1) Daily anecdotal records by each staff member; (2) A social-physical diagnostic development check list; (3) A final written report by the entire staff on the child's developmental behavior; personal-social behavior; auditory, vision, and speech observations; parents' attitude; and recommendations; and (4) A written evaluation by each set of parents.

Summaries and reports

In their evaluation the parents were most enthusiastic and appreciative of the help and guidance they received during the week. They were especially pleased to be able to bring their other children so that they, too, could assist in the care, training, and understanding of their deaf-blind brother or sister. ☐ The staff was in complete agreement that it was a very valuable and successful project. Eight of the children were admitted to the early childhood education deaf-blind program for the 1969-70 school year. It was hoped that most of the others, with additional training and guidance, would be admitted in the near future. Subsequently, they were referred to various local agencies in their home communities and were invited to spend another week

Project Evaluation

on campus during the regular school year. A sustaining program of this type during coming summers could be profitable to these same children as well as to other deaf-blind children who have had no program.

Orientation and Mobility Training in Israel

The Israeli Institute of Orientation and Mobility, formerly the Israeli Foundation for Guide Dogs for the Blind, is located in Kiryat Chaim, a small town just outside Haifa. The Institute, under the direction of Prof. Dr. Rudolphina Menzel, offers training in the use of both dog guides and the long cane to an average trainee load of about 10 individuals. Because both modes of travel are offered, the trainee not only has a choice, but can obtain whatever advice he needs to make that choice and, further, to change modes if his initial choice does not work out.

Alan Siegel, a mobility instructor for the Mt. Diablo School District, Concord, California, and a graduate of the mobility instruction program at San Francisco State College, visited the Institute last winter. He reports, "One of the practices of the Institute which impressed me was the attempt to give some follow-up instruction in the trainee's home area. Itinerant instructors may give additional training to dog guide users after they have completed the mandatory four-week course at the Institute. Itinerant teachers also work with cane travel trainees and some of these receive most of their instruction in their home area." The core faculty of instructors was trained by Harold Richerman, Industrial Home for the Blind, Brooklyn, who, in 1965, conducted a course in mobility instruction at the Institute under the auspices of the U.S. Vocational Rehabilitation Administration. At present, most of the instructors, both full-time and part-time, are women.

Migdal Or, a rehabilitation center for the blind, is within walking distance of the Institute. Before trainees complete their training there they are evaluated at the Institute to see what their mobility needs may be. Although there is a residential school for the blind in Jerusalem and integrated programs in the public schools throughout Israel, it was Mr. Siegel's feeling that "there still seem to be mobility needs that are not being fulfilled for the younger blind." There have been summer courses for blind adolescents given at the Institute, but, as is true in much of the United States, there is no regular, organized program of mobility instruction for school-aged blind children.

Institute visited by Alan Siegel

(Continued on page 339.)

Learning and Association in the Presence of the Blind

There is a body of literature to support the proposition that the presence of a disabled person, in situations involving interpersonal contact, will lead to general discomfort and "interaction strain." The proposition was, in part, the subject of early work by researchers at Stanford University who undertook a number of studies of the reaction of war-injured males to curiosity,¹³ acceptance,⁹ and help¹⁰ in the responses of the non-disabled. Goffman⁴ has summarized much of the work in this area. The more recent data on "interaction strain" are found in studies presenting self reports of emotional state in encounters with the disabled, and in laboratory investigations utilizing disabled confederates, where precise measures of interaction distance, physiological arousal, and other quantifiable aspects of behavior are obtained under controlled conditions.

□ With regard to self-report measures, the data of at least two questionnaire studies indicate that the physically normal person reports discomfort and uncertainty in interacting with a disabled person. Siller¹² factor analyzed a large number of items in developing scales measuring attitudes toward amputation, blindness, and cosmetic conditions. Seven factors, almost identical in form, and predominantly negative in affective tone, were isolated for the amputee and blind scales. They were labeled: (1) interaction strain, (2) rejection of intimacy, (3) generalized rejection, (4) authoritarian virtuousness, (5) inferred emotional consequences, (6) distressed identification, and (7) imputed functional limitations. Factors uncovered for the cosmetic scales differed in some degree from those above, with the exception of interaction strain. This particular factor was common to all three scales, and has special relevance to the present study. In general, the factor reflected feelings of uncertainty, uneasiness, and constraint in interacting with the disabled. Typical items are: (1) I feel uneasy when I come near a (blind person; amputee; disfigured person); (2) I would feel nervous with a/an (blind person; amputee; disfigured person) because a lot of the time I wouldn't know the right thing to do; (3) I would be afraid of saying the wrong thing in talking to a/an (amputee; blind person; disfigured person). Whiteman and Lukoff¹⁴ in a factor analytic study of attitudes toward blindness identified a factor which they labeled interpersonal acceptance.

At the behavioral level, data suggestive of interaction strain in relating to

The author wishes to thank William Glover, Kurt Malkoff, and Charles Wexler who served as confederates and experimenters in the studies; and Mr. Wallace Watkin, executive director, the Vision Center, Columbus Association for the Blind, Columbus, Ohio, and Mrs. Loetta Hunt, associate professor of education, Ohio State University, for assistance in training the confederates.

REGINALD L. JONES

Professor Jones is with the Department of Education, University of California, Riverside.

Attitudes and "Interaction Strain"

Studies by Kleck et al.

the epileptic and orthopedically disabled have been obtained in studies conducted by Kleck and his associates. These studies provide data indicating that subjects interacting with a physically disabled (as opposed to a physically normal) confederate showed greater physiological arousal,⁵ less variability in their behavior, terminated interaction sooner, expressed opinions which were not representative of their actual beliefs, reported discomfort in the interaction,⁸ demonstrated more motoric inhibiting,⁶ and in the case of a confederate said to have epilepsy, maintained greater physical distance.⁷

The present study, using confederates simulating blindness, extends the Kleck line of investigation to the cognitive domain. The question here concerns the extent to which information decoding and processing are interrupted by the presence of a blind person. A basic assumption is that the presence of a blind or other disabled person arouses anxiety and, as a consequence, disrupts cognitive functioning.

□ The purpose of this first study was to learn whether or not differences in verbal learning and associative clustering would occur if the learning took place in the presence of a blind confederate rather than in the presence of a sighted one.

Bousfield,¹ Matthews,¹¹ and Dallett,² among others, have shown that words presented in randomized lists for free recall are recalled in clusters according to category membership. This phenomenon is referred to as associative clustering. For example, if the words, cat, oak, eggs, pine, dog, elm, potatoes, spruce, wolf, oranges, elephant, and bread were presented in serial order over one or more trials, perfect clustering would be said to occur if all words were recalled in their respective food, animal, and tree categories. One perfect ordering for the list would be oak, elm, spruce, pine; wolf, elephant, dog, cat; eggs, oranges, potatoes, bread. In most instances, even over a series of trials, perfect clustering does not occur.

Dallett² has outlined procedures for determining degree of clustering which takes account of the number of repetitions (i.e., the number of categorical items which follow a member of the same category in recall) in relationship to repetitions which could occur by chance. These procedures were used in the present studies. In general, conditions that produce high recall scores for individual words are also likely to favor high clustering scores, although there are obvious exceptions related to length of list and number of categories. Conversely, conditions which lead to low recall scores should lead to low clustering. As indicated previously, the expectation was held that the presence of a blind confederate would be disrupting, and as a result would interfere with the learning and association called for in the present study.

Subjects were 30 students participating in an experiment in verbal learning as part of course requirements in introductory psychology at Ohio State University. There were 16 males and 14 females, almost all of whom were either of freshman or sophomore standing.

Confederates were two male undergraduate students alternating between the roles of blind subject and experimenter. They were specially trained in the simulation of blindness by the director of a local agency for the blind

Experiment One

Associative clustering

Experimental confederates

and by a university specialist on education of the blind. The confederates observed blind individuals in locomotion, were informed about blind mannerisms, and practiced locomotion with use of a cane. Both wore dark glasses and carried a cane when participating in the experiment, and each served approximately an equal number of times as experimenter and blind subject.

□ The experiment was conducted in a laboratory suite in a university dormitory. The suite consisted of a large reception area, from which radiated four smaller rooms, each divided into two parts. The subjects presented themselves in the reception area and were directed to one of the rooms where the actual experimentation took place. The subjects, naive in regard to the purpose of the study, were given the impression that they were participating in a learning experiment; and that one objective of the investigation was to determine the effect of pre-exposure to a list of words on the subsequent word learning of a second subject. The first subject was given this information alone, following which the experimenter returned with a second subject, presumably also naive, who was to participate in the study. In half the cases this second participant (confederate) was "blind," and in the remaining half, sighted. Half the boys were randomly assigned to the "blind" confederate and half to the sighted confederate (and similarly for girls). The subject was given the following instructions:

Procedures

You are participating in a verbal learning experiment. One part of the experiment involves the learning of a simple set of words which will be presented in five trials. The second part of the experiment involves the testing of a pre-exposure effect on the other subject who will be participating with you.

Instructions

After giving the instructions indicated above, the experimenter brought in the confederate, who sat in front of the experimental subject. The confederate was always led to (or sat in) a chair directly in front of the subject.

The experimenter then read the remainder of the instructions to both the naive subject and the confederate:

I am going to present to you a series of words, one at a time, for a few seconds each. After they have been presented once, I will ask you to write down all you can remember. This procedure will be followed in five trials. The order in which you write the words is entirely up to you. Each time I present them to you they will be in a different order, so don't try to learn the order in which they are presented; simply try to learn the words as individual words so that you can write them all down correctly after as few trials as possible. You will have a minute and a half after each trial to write the words you can remember.

The control subject was told, "Jim, you must listen this time and afterwards I will give you a similar test."

The subject's task was to learn a list of 25 words, presented via tape recorder, in five trials. The words were maple, elm, birch, fir, chestnut, leg, foot, eye, nose, ear, gun, sword, club, pistol, spear, iron, steel, tin, silver, brass, pea, bean, corn, spinach, and cabbage representing, respectively, the categories (1) trees, (2) part of the human body, (3) weapons, (4) metals, and (5) vegetables. After each trial, the subject recorded the words on a sheet of paper

25-word list

which was turned in to the experimenter. The confederate was led out of the room when the five trials were completed. The session was concluded with subject completion of a questionnaire and the debriefing session.

The post-experimental questionnaire using a seven-point semantic differential rating format (see Table 1) inquired into respondent reactions to the "Whole Experimental Situation" and to "The Other Subject."

	<i>Learned in the presence of:</i>		<i>Blind</i>		<i>Sighted</i>			
<i>Reaction</i>	<i>M</i>	<i>S.D.</i>	<i>M</i>	<i>S.D.</i>	<i>t</i>		<i>p</i>	
Of males (N = 16)								
to the experiment:								
I found it very interesting	6.00	.71	5.38	1.20	1.17		NS	
I felt very uncomfortable in it	2.88	1.16	4.25	1.85	1.67		NS	
It made me feel completely at ease	3.88	1.89	2.38	.47	2.05		<.05	
It irritated me	2.88	1.61	2.50	1.32	.37		NS	
It bored me	1.50	.50	1.88	.88	.85		NS	
I was tense	4.63	1.92	3.88	1.68	.78		NS	
to the other subject:								
I was curious about him	6.13	1.34	2.38	2.17	3.91		<.01	
He made me feel uncomfortable	3.88	1.04	4.00	1.50	.17		NS	
He made me feel tense	3.88	.76	4.13	.57	.69		NS	
I noticed something different about him	6.00	2.00	2.50	2.12	3.18		<.01	
Of females (N = 14)								
to the experiment:								
I found it very interesting	5.43	.89	5.57	.73	.30		NS	
I felt very uncomfortable in it	3.71	1.68	2.71	1.29	1.15		NS	
It made me feel completely at ease	4.43	1.67	4.14	1.96	.28		NS	
It irritated me	2.57	1.18	2.71	1.59	.17		NS	
It bored me	1.71	1.39	1.57	.73	.22		NS	
I was tense	3.43	2.13	3.57	2.06	.12		NS	
to the other subject:								
I was curious about him	5.57	1.50	2.14	1.56	3.90		<.01	
He made me feel uncomfortable	2.71	1.21	3.43	.89	1.18		NS	
He made me feel tense	2.57	1.18	4.00	.54	2.70		<.05	
I noticed something different about him	7.00	.00	2.00	1.31	*		*	

* Not computed due to absence of variance in the blind condition.

□ Subject performance on the five learning trials for those learning in the presence of the blind and in the presence of the sighted confederate was analyzed separately for each of the five trials using "t" tests for independent groups. Mean differences in learning and associative clustering between males and females were also studied using "t" tests although, unfortunately, no differences in sex performance were studied as would be uncovered in an analysis of variance design. The results of all the above analysis revealed no significant differences ($p \leq .05$) in learning or associative clustering for subjects of either sex learning in the presence of sighted or of blind confederates.

In addition, there were few reliable differences in reports of subjective states during the experiment between those who performed in the presence of

TABLE 1

Subject Reaction to Post-Experimental Questionnaire: Experiment 1

Results and Discussion

the blind confederate as contrasted with those who performed in the presence of the sighted one (see Table 1). However, one exception to the generalization was females' report of greater tension in the presence of the blind confederate ($p < .05$). Both males and females reported greater curiosity in regard to the blind confederate, and both noted "something different about him" ($p < .01$). These latter responses are probably only confirmation of the fact that the confederate was recognized as being blind, and hence provide no support for the basic questions being addressed in this study.

In general, analysis of learning and clustering scores, and of responses to the post-experimental questionnaire provided no data to support the view that the blind confederate interfered with the learning or association of a naive subject. There is the possibility, if anxiety is generated at all by the presence of a blind person, that the effect is of insufficient strength to actually disrupt cognitive functioning. There is the possibility also, again entertaining the view that the presence of a blind person is disturbing, that the subject handles this internal state by greater task orientation, with a consequent reduction of extra-task responsivity. This explanation was suggested by the somewhat superior performance of male subjects when learning in the presence of the blind (especially in the early trials), and also received some support from a recent study in Kleck⁶ which found greater motoric inhibition when interacting with a disabled confederate. The above explanation would not, however, account for the responses of female subjects. A third explanation could reside in the small sample-size. However, data obtained in the post-experimental questionnaire pointed to possible methodological difficulties regarding the credibility of the confederate, and of the experimental situation in general, as major problems in the experiment. These difficulties led to the design of a second study, which is described below.

□ A number of respondents in the first experiment noted that the subject "appeared to be blind." Obviously, if the naive subject perceived the experiment to be a contrived one in regard to the blind confederate, the effect which we were attempting to find would not occur. The second experiment, therefore, initially using the same procedures as the first experiment, was designed to learn something of the extent of subject suspicion of the experimental confederate and of the procedures, with the view that these aspects of the study would be modified to take account of procedural flaws if necessary.

The subjects were 35 undergraduates enrolled in introductory psychology at Ohio State University, and participating in the study to fulfill course requirements. Most were of freshman or sophomore standing.

The first group of subjects ($N = 20$) was run in exactly the same manner as in the first experiment. The post-experimental questionnaire, however, was supplemented by a probing interview which inquired into the subjects' suspicion of the procedures or confederates, and the reasons for such suspicions, if they existed. In addition, inquiries were made about the subjects' previous contact with and knowledge about blind persons.

Several additional pilot studies of two to three subjects each were conducted to refine the methodology. The primary concerns in these small studies were:

Analysis of scores and responses

Experiment Two

Interview was added

Additional pilot studies conducted

(1) to devise a method of introducing the confederate into the experimental situation in as natural a manner as possible; (2) to eliminate subject suspicion of duplicity; and (3) to create a situation where there was some natural but controlled interaction between the confederate and subject. The product of these explorations is given in the experiment described below.

The subjects (25 males and 25 females) were enrolled in introductory psychology at Ohio State University and participating in the experiment for course credit. They included none of the individuals who had participated in previous studies in this series. Subjects were given the following instructions:

This is a team learning task. Your task will be to learn a set of words given to you on the tape recorder. You are to learn as many as possible. Do not try to learn them in any order. Your team score will be a composite of your individual scores. We want to determine if, and how much information about your partner influences your learning performance. To do this I will stop you periodically to ask a few questions about yourself. Any questions so far? . . . First, I want you to give your partner your name, age, and home town. O.K., trial one; listen carefully.

Following the first trial, the discussion question was, "Now, what problems in college have you had?"

During this interaction both blind and sighted confederates indicated that their major difficulty had been adjusting to the campus (primarily because of its size), locating buildings, and in general moving over great distances frequently required to get from one place to the other. Both commented on the differences between their high school and college physical plants. Finally, they noted that the adjustment to the campus had been made and that they were generally able to get around the campus without difficulty.

The subjects were then given the second trial, followed by the post-experimental questionnaire and debriefing. The blind subject was always led out of the room during the recall sessions, presumably so that he could give his responses verbally to the experimenter without interrupting the subject.

As in the first experiment, criteria were number of words learned, associative clustering, and responses to the post-experimental questionnaire. However, in the second experiment, the naive subject was asked to indicate whether or not his performance had been disrupted by the presence of the confederate (and related concerns). Also, only two, rather than five trials were administered.

□ Data on learning and clustering (mean number of words learned or mean degree of clustering) by trial for subjects performing in the presence of the sighted or blind confederate reveal, with the exception of the first trial clustering for males performing in the presence of the blind confederate, unremarkable results: in general, using "t" tests for independent groups, no reliable differences ($p \leq .05$) in performance for the two groups were found. Superior first trial clustering could be merely a chance occurrence, or it could reflect greater attention to the task in the presence of the blind confederate, and thus may reflect a strategy adopted by the male subjects in responding to

Discussion between subject and confederate

Results and Discussion

the task. Some data supportive of this interpretation are to be found in the greater learning of males when in the presence of the blind confederate, although as noted previously, the differences do not reach an acceptable level of statistical significance.

For females, in virtually every analysis there was greater variability in the words learned in the presence of the blind confederate, indicating greater differential response on the part of these subjects. On the other hand, there was less clustering by females under the blind confederate condition. The differences in variance (using a "t" test for differences between variances) reach an acceptable ($p < .05$) level of statistical significance in only one instance. However, the pervasiveness of the tendency for greater variance of response when interacting with the blind confederate, and the fact of the small number of subjects used in the present study leave open the need for further explorations of sex differences in response to the blind.

No reliable differences ($p < .05$) were found in the responses of subjects of either sex, and in either condition in regard to questionnaire items relating to the "whole experiment," or to the "other subject" using a seven-point semantic differential type rating format. However, when requested more directly to indicate (1) whether the between trial interaction had hampered their performance, (2) whether or not the confederate had hampered their answering ability, and (3) whether or not they perceived that their performance would have been better if the other subject had not been present, there was clear perception that the between trial interaction with "blind" confederate interfered with performance. In addition, in contrast to those interacting with the sighted confederate, analyses using "t" tests for differences between proportions revealed that a reliably ($p < .05$) larger proportion of those dealing with the blind confederate believed that their performance would have been better if he had not been present (see Table 2).

Question	Learned in the presence of:		t	p
	Blind (N = 25) % Yes	Sighted (N = 25) % Yes		
Do you feel that you were hampered by the interaction between each trial?	64	36	2.92	<.01
Do you feel that the other subject hampered your answering ability?	24	12	1.32	<.10
Would your results have been better if the other subject had not been present?	32	12	2.47	<.02

As indicated previously, a poorer performance when learning in the presence of the blind confederate was not the state of affairs. That the subjects perceived interaction with the blind confederate to affect their performance is relatively clear. But what of the actual performance? Is there evidence to support poor criterion behavior in those who saw interaction with the confederate as hampering their learning? Data on this point were obtained using Mann-Whitney U tests, which tested differences in number of words learned

Greater variance for females

TABLE 2
Subject Perception of Influence
of Confederate on His Performance:
Experiment 2

Mann-Whitney U tests were used

or degree of clustering between those perceiving that their performance was hampered by interaction with the confederate, and those who saw the confederate as having no influence on their performance. The results of these analyses revealed U's which exceeded the critical level ($p < .05$) in all instances, revealing, therefore, both for those interacting with blind and with sighted confederates, that the respondents' perceptions of poor performance was not in fact the case. Subjects in both groups expressed the view that their performance would have been better in the absence of the confederate—either blind or sighted. Thus, the discomfort in interaction with another person could not be attributed only to the presence of the blind confederate.

It is significant, however, that there was a greater tendency to believe that one's performance was impaired when interacting with a blind individual than when interacting with a sighted one, even though objective evidence is to the contrary. This finding would seem to have special significance for school programs, where blind children are integrated with sighted ones; and indeed, in other situations calling for interaction between blind and sighted individuals. With respect to the school situation, if non-disabled children believe that their cognitive functioning is disrupted by the presence of a blind student, here obviously is a situation in need of remediation. The question of whether such an effect occurs in school situations, i.e., whether "normal" children believe that their learning and performance is impaired by the integration into their classroom of one or more exceptional children (and indeed whether diminished performance is in fact the case), is basic to many special education administrative arrangements. Yet, outside of a few studies of the attitudes of "normals" toward exceptional children, the impact of integration of the exceptional on the actual learning and performance of the non-exceptional is an unstudied problem. The experiments reported here are more provocative than definitive, but they do offer results bearing on the problem; and, perhaps as importantly, they offer a methodology for future research in this area.

Of course, the reports given in the present experiments stem from only a short-term interaction in a contrived laboratory setting, and it is possible that the responses may be entirely different when the nondisabled are placed in situations calling for interactions with the blind over a period of time. Here obviously is an area needing further study.

Tendency to believe performance was impaired

Limitations of study

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The Recruitment, Selection, and Training of Blind Vending Stand Operators

One of the major employment opportunities for the blind and severely visually impaired has been the operation of vending stands in public and private buildings. For example, in fiscal 1969,⁴ there were 3,002 operating vending stands providing employment to 3,341 individuals who annually earned an average of \$5,868. The number of vending stands and jobs has been growing at an annual rate of about three percent and continues to represent an excellent opportunity for substantial gainful employment for the visually impaired. Since the operation of vending stands is a large national program which continues to grow, the agencies responsible for making decisions in this area feel that they need assistance in selecting applicants for specialized rehabilitation. For this reason, it seemed desirable to examine the potential for development of a selection battery for vending stand operators (VSO).

□ Although several studies have been conducted which involve VSO's, none were designed to develop a selection battery. Sakata and Sinick⁵ simulated a vending stand to evaluate the potential of blind persons for placement as VSO's. To complement the observations obtained from the simulated vending stand, they used a battery of tests which included the California Psychological Inventory, the Lee Thorpe Occupational Interest Inventory, the Minnesota Rate of Manipulation Test, the Penn Bi Manual, the Purdue Pegboard, and the vocabulary section of the WAIS. However, this battery was never validated.

In a recent publication, *The Vending Stand Management Handbook*,⁶ a battery of tests was suggested based upon the recommendations and experiences of various agencies. A similar listing of selection devices and variables was suggested by Yoder in the report on the Conference on Business Enterprises for the Blind.³ However, neither of these recommendations have been implemented or evaluated. Thus, at this time there are no tests with established validity for selecting VSO's. The only options available to an agency planning to use selection procedures is to act on the recommendations of the above reports, rely on the personal judgment of counselors and interviewers, or use a combination of both procedures.

Although there seemed to be a useful place for a test battery for selecting blind persons for the position of vending stand operator, it seemed prudent to question whether the need was sufficient to justify the expense of nationwide validation. Thus, it was decided to conduct a simple study of the experiences of state agency personnel in evaluating, selecting, and training VSO's in fiscal years 1968 and 1969. One-page questionnaires were sent to the state directors of each vocational rehabilitation program providing services to the blind. The questions posed were:

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Need for a Validated Selection Battery

Assessing the adequacy of current selection procedures

☐ 1. How many clients were evaluated for possible VSO training in the last two fiscal years?

2. How many clients were selected for training in the last two fiscal years?

3. How many clients were rehabilitated as VSO's in the last two fiscal years?

4. What percentage of those rehabilitated as VSO's have been performing well enough so that both the agency staff and the client are satisfied that this placement has been a good thing for the client?

5. What is the average cost of training a VSO applicant?

6. What is the average cost of evaluating a VSO applicant?

7. What is the average cost of placement and follow-up for a VSO trainee?

8. What is the average length in weeks required to complete a VSO training program?

For the first four questions the agency respondent was asked to indicate the appropriate number for fiscal years 1968 and 1969. They were also asked to indicate whether the number reported was secured from state records, based on their own estimates, or obtained in some other way.

Usable responses were received from 35 of the 54 state agencies that were sent initial and follow-up requests for completing the questionnaire. State records were the primary source of information used in determining the number of VSO's in various stages of rehabilitation. As Table 1 shows, the median

Typical program is small

Questions	Year	Median	Interquartile Range
Number of VSO's evaluated	1968	15.0	5-20
	1969	16.5	7-28
Number of VSO's trained	1968	10.5	2-17
	1969	9.0	5-25
Number of VSO's rehabilitated	1968	8.5	2-13
	1969	7.5	3-15

TABLE 1

Number of VSO Applicants
Evaluated, Trained, and Rehabilitated
During Fiscal 1968 and 1969 for
Each Agency

number of clients evaluated in a state program was 15 in 1968 and 16.5 in 1969. The interquartile range of the states reporting (includes middle 50 percent of those agencies reporting) evaluated between 5 and 20 clients in 1968 and between 7 and 28 in 1969. The median numbers of clients selected for VSO training in 1968 and 1969 were 10.5 and 9.0 respectively, with an interquartile range of 2 to 17 and 5 to 25 respectively. Finally, the median number of clients rehabilitated in the VSO programs was eight in both 1968 and 1969.

Using the median data for these two years, it appears that two-thirds of the individuals evaluated for the vending stand program are selected for training. Of the group that enter training about nine out of ten are rehabilitated as VSO's. A clear majority of the agencies (19 of 31) report that 90 percent or more of the VSO's satisfactorily meet the standards of agency staff and

High level of satisfaction

are satisfied with their job placement. An additional one-third (10 of 31) indicate that 70 to 90 percent of the VSO's perform satisfactorily and are satisfied with their work. However, two agencies reported that only 40 to 50 percent were satisfied with, and performing satisfactorily at, their VSO job.

The median cost for evaluating, training, and placing VSO's appears relatively low and stable. To evaluate a VSO program applicant, the median cost was \$75 with an interquartile range of \$0 to \$220. Training VSO's is probably less costly than many other educational programs offered rehabilitation clients. The median cost for training a VSO was \$490; the interquartile range was \$150 to \$710. The typical duration of training was 11 weeks; the interquartile range was 6 to 16 weeks. The cost of placement and follow-up was relatively low with the median agency estimate being \$19 and the interquartile range being \$0 to \$200.

As reported, the data indicated the total number of persons in each category for each year. This cross section of cases for one year might not necessarily match the results which would be obtained if data were tabulated longitudinally with the same set of clients records for individuals entering the VSO program. However, the data from year to year tend to be quite similar, and are partially confirmed by the Rehabilitation Services Administration (HEW) whose records show only a small (2.5 percent) annual increment in the number of new rehabilitations between 1968 and 1969.⁴

□ Since the majority of programs select and train fewer than ten persons per year for the VSO program, the use of systematic selection procedures based upon empirically derived test batteries is not feasible for most state agencies. Thus, if tests are desired it would be necessary to study a national sample of individuals considered for the VSO program. The benefits of such a study would, of course, have to be weighed against the anticipated costs.

About 80 to 90 percent of those entering training as VSO's are subsequently rehabilitated in that position. Thus, there is reason to question whether an empirically derived test battery could materially improve this record. The data suggest that those state agencies which now spend \$100 or more per client might be able to secure more evaluative information for the same or lower price. Unless there is a rapid expansion of the number of persons recruited for the VSO program, the best approach would be to select from the interest, intelligence, and aptitude measures suggested in the Harbridge House Report.⁶ Since the VSO position follows a well-defined pattern and the supervisor of the program usually selects or participates in the selection of trainees, supervisors might use a structured interview designed to reliably elicit information about life experiences and activities of the client relevant to the work of the VSO. The actual data needed in determining relevant life experiences which relate to the work of the VSO could be obtained from a study of supervisors' experiences with successful VSO's, and tentative plans for such a study have been formulated by the authors. Because of the success of current selection procedures, there are no plans to conduct such a study. The suggestion of Sakata and Sinick⁵ to use simulated job tasks might well be incorporated in either the selection or training procedures in much the same

Cost of evaluation, training, and placement

**Systematic Selection Procedures
Not Feasible**

Structured interview

fashion as prevocational evaluation processes now incorporate work sample tests.

Other tests which have not been mentioned in the literature on selecting the VSO but would appear to have some potential value are the Minnesota Vocational Interest Inventory (MVII)² and the Minnesota Importance Questionnaire (MIQ).⁷ The first of these inventories includes keys for sales persons; this key yields an interest score which is more closely associated with VSO interests than those scores available from other interest measures. Since the MVII was empirically validated to differentiate sales persons in skilled and lower level jobs it seems to have more potential than other available measures for helping clients and their counselors decide on the appropriateness of the VSO position. The MIQ has some promise for enabling the individual to determine whether his personal needs are congruent with the types of occupational reinforcements provided by the job.¹ This approach would involve securing a composite description of the occupational reinforcers associated with the VSO position and subsequently relating the MIQ profile of the applicant against the job reinforcer pattern.

As is the case with other personnel problems, efforts to optimize the qualifications of blind applicants for the VSO position may involve other problems than selection. One of these which has been given substantial consideration by the state programs is that of training. The quality of the training program may well be the explanation for the high proportion of VSO's who are reported to be successful. Those programs which feel that their success rate is not satisfactory might still want to review their training programs before considering any extensive work in developing a test battery. Since training in the VSO program involves more follow-up supervision than is usually associated with the rehabilitation of a client for a position, this also might be reviewed.⁶ Thus the quality of the help which the field supervisor can offer to the VSO rehabilitator by his program may well be a major determinant of success.

□ At the present time, there does not seem to be sufficient need to justify the expense of validating a selection battery on a national scale. The results of the questionnaire indicated a current rate of success in rehabilitating VSO's which could not be improved appreciably by a selection battery. The present report provides a current look at the evaluation, selection, training, and follow-up success experienced by state agencies. The feasibility of continuing study of the VSO and the review of possible selection procedures have also been reviewed.

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The MVII and the MIQ

Training procedures might be examined

Summary

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Index for Volume 64 of the New Outlook

The annual index of the *New Outlook for the Blind*, which in the past has appeared in the December issue, will this year be included with the January 1971 issue.

Restoration and Habilitation of Handwriting Skills to Adults in a Rehabilitation Center Setting

I believe that one of the most challenging areas of instruction in communication skills for the blind is restoring and teaching the skill of handwriting to the blind. As late as 1961, during a four-center conference of rehabilitation center instructors, the subject of the restoration of handwriting skills to the newly blinded and the teaching of handwriting skills to the congenitally blind was approached only quite cautiously. The most that any center expected of an individual was the signing of his name. Even with the newly blinded individual, little attention was given to the restoring of his handwriting skills. One center did not even teach the individual to use his signature. Upon further investigation it was discovered that the main reason for not dealing with this problem was the lack of instructional material and good techniques. Over a period of many years there have been various aids and devices developed to help an individual to write in longhand. Why then was this area so forsaken?

The Kansas Rehabilitation Center for the Blind set about to answer this question. Thorough investigation and review of the apparatus, devices, and instructional materials then available revealed that most of them were very cumbersome and that the techniques described did not always work. Nothing had been done in the area of teaching kinesthetic memory. The investigation was carried into teaching in related fields, including the education of the perceptual motor skills of brain-damaged veterans and brain-damaged children. It was discovered that education and re-education was totally dependent on kinesthetic memory. Dr. Alfred Strauss had developed numerous successful teaching methods to educate the child with brain damage in the visual-perceptual area to learn handwriting. Some of these methods were adapted into an experimental program to see if a blinded individual might not profit from the same kind of education. After two years of experimentation in our communication classes, it was discovered that a blinded individual needed only to reorient himself to the spatial conception of the written line. For the person who had been blind for many years, re-education of his motor memory was required. For the congenitally blind person, who had never written, we found that the techniques used in re-educating the motor skills could be used in educating this person's kinesthetic memory. We experimented with handwritten letters that had been engraved into masonite. The individual would use a pencil-shaped stylus and trace within the grooved letters. We were very pleased to discover that his muscle memory could be trained using this method. This was similar to the method that Dr. Strauss had used in educating his brain-injured children to write in longhand.

This preface is by Mrs. Claudell Stocker, coordinator of the Communications Department, Kansas Rehabilitation Center for the Blind, Topeka.

Investigation and review

We do not, by any means, believe that this is the only way to perform the task. There is much to be learned and we would hope that all workers in rehabilitation centers for the blind would use their own program as stepping-stones in creating more and better techniques in this area.

In beginning any work with handwriting it is important to include a discussion of good posture. During the initial evaluation and during the time of actual instruction, the trainee should be encouraged to sit up to the table, with the hips back in the chair, and both feet on the floor.

Frequently, trainees have stopped writing not because their writing has become illegible, but because they are afraid they would write over part of what they have already written. For this person, learning to use one of the aids for following a straight line is sufficient. If his penmanship is poor and he has forgotten the shapes of some of the letters, it will be necessary to use some of the methods that will be described in the section on habilitation of a new skill to refresh his memory. In either case, the trainees should be asked to prepare some samples of their writing so that their skills can be evaluated. Even those who have not used their handwriting for a number of years should be asked to complete as many of the samples as possible.

□ The writing samples to be attempted should include the trainee's name and address; a short paragraph (subject not important); and two letters, one business and one personal, with envelopes. The letters can be written to imaginary people and, of course, are not mailed. A person with enough vision to see the lines on ruled paper should write one of the letters on such paper. Even if he can not reread his own handwriting, he may be able to follow the lines while writing. Samples of writing should be collected also from those who have forgotten the shapes of many of the letters of the alphabet. Their samples should consist of the letters and numbers that they do remember and possibly their names. The samples can be used not only for the initial evaluation but later on for comparison with future work to measure progress. It is, therefore, helpful to have several samples from each individual in order to cut down on the tendency to change a person's natural style of handwriting.

□ A person who had been able to write when sighted, but has used his handwriting very little since he began losing his vision, needs help mostly in learning to follow a straight line and in adapting his spatial concepts of handwriting to the limitations imposed by the loss of vision. Most of the aids that help a person to follow a straight line are placed over the paper, a few go under the paper, and some involve only the paper itself. Most can be used equally well after the restoration of the handwriting skill.

The Steven Brothers Foundation, Inc. (610-612 Endicott Building, St. Paul, Minnesota 55101) has a Templet-Letteriter that is placed over the paper. It is a piece of cardboard with a number of holes cut in it called windows, in which the writing is done. The windows prevent writing over what has been written previously. Paper clips can be used to attach the templet to the paper. A disadvantage of this aid is that it allows for only 13 lines, five inches long, on an 8½-by-11-inch sheet. Another aid involves a standard clip board with

MARY LOU STARK

Mrs. Stark is a former instructor in the Communications Department, Kansas Rehabilitation Center for the Blind, Topeka.

Samples of Writing Before Lessons

Restoration of an Old Skill

Writing guides

notches cut at half-inch intervals along each edge. A piece of elastic cord, tied horizontally around the clip board, is moved from notch to notch as each line is written. The paper is clipped to the top of the board in the ordinary way. A disadvantage of this aid is that as the person writes across the page, there is a tendency to pull down on the cord in the middle of the line, causing a "sway-backed" line, one that may overlap the next line. The tendency to "sway-backed" lines can be corrected by relaxing the guide finger after writing each word. The necessity of having to move the elastic cord after writing each line sometimes causes the person to lose his train of thought.

Plans for a similar aid, but one that eliminates this last disadvantage are available from the Arkansas Enterprises for the Blind, (3811 Fair Park Boulevard, Little Rock, Arkansas 72204). It is called a line board and, rather than having only one elastic cord, it has a number of permanent horizontal cords to allow a person to maintain his train of thought from one line to the next. This aid holds standard typing paper between two pieces of fiberboard, the top piece of which has a large window with the pieces of elastic cord stretched horizontally across the opening. This aid is nearly an inch thick which can be irritating to the forearm of the writer. It also increases the tendency to hold the writing arm up which makes writing more difficult.

Pencil-writing paper 8¾ by 10½ inches with embossed guide lines one half inch apart can be purchased from the American Printing House for the Blind (1839 Frankfort Avenue, Louisville, Kentucky 40206). A disadvantage of this aid is that it requires ordering by mail that may cost more than commercial stationery. Further, it comes only in white, without monogramming or floral patterns that might appeal to female trainees.

Regular paper can be used without any special aids by rolling the paper around a pencil or pen, taking the pencil out, flattening the paper, and then unfolding it. This creates raised lines on the paper, but also gives the paper a wrinkled, creased appearance. Its use requires an excellent sense of touch as the lines are not as pronounced as on embossed pencil-writing paper.

□ The Grooved Fiber Writing Card is available from Howe Press (Perkins School for the Blind, Watertown, Massachusetts 02172). It is the same size as standard typing paper, 8½ by 11 inches, and is made of a medium-weight cardboard with a series of horizontal grooves and ridges. The paper is placed over the writing card or board with the ridges being felt through the paper. A possible disadvantage is that the rigidity of the lines may cause jerking of the hand and irregularity of the lower portions of letters. It is, however, preferred for instructional purposes.

No aid is perfect for everyone, and many people prefer to have several aids accessible to be used according to what is to be written.

Because the grooved writing board is used more extensively in instruction, its use will be discussed more thoroughly. The paper is placed on top of the board and may be held in place with paper clips at the upper corners. The paper should be put on the board (sometimes jokingly called a "wash-board") on the side where the grooves (sometimes called valleys) are wider

Plans for making an aid

Special paper

Grooved Fiber Writing Card

than the ridges, not the opposite side where the reverse is the case. When teaching longhand writing, the board should be placed at a slant, just as when the person wrote with vision.

Although the space between the ridges (where the writing is done) appears to be quite small when first looked at tactually, it is the width of regular wide-lined paper. Before doing any writing, the trainee is given an opportunity to explore the writing board thoroughly. After examining the board, trainees with some vision are requested to use a blindfold in learning how to use the board. It has been found that when a person has fewer distractions with which to deal, he learns a new skill more rapidly. The use of a blindfold helps to cut down on all visual distractions as an individual strives to develop a new tactual skill. The blindfold is used with people having only light perception as well as with people having more vision. By occluding all visual messages to the brain, the trainee can concentrate on interpreting the messages that are being sent to the brain from the fingertips. The blindfold is always used during the beginning stages of instruction. Its use is sometimes discontinued after the skill of handwriting without vision has been well developed. The trainee first moves his forefinger along a groove (without a pencil), following a full line in order to familiarize himself with the board while using the blindfold.

Exploring the board

When writing with the right hand, the left forefinger follows along in the groove as a place holder. The forefinger should not touch the pencil except immediately prior to lifting the pencil from the paper. (Although many people prefer to write with a pen, a pencil is usually used for practice as it is easier to clean pencil lead off the fingers than ink.) When writing with the left hand, the right forefinger would precede the pencil as a place holder, again not touching the pencil. The finger is moved up to the pencil before lifting it at the end of a word, to insure leaving a space between words. This finger also serves as a guide in going from one line to the next. When the end of a line is reached, the guide finger is dropped down to the next line and goes back to the left in this groove that does not contain any writing. This cuts down on the smearing of the ink or pencil lead.

Forefinger as guide and place holder

There are two main ways of keeping track of how far down on the page one has written. The first way is simply to count the lines as he writes or when he stops writing. A second way is to use an additional paper clip on the left hand side of the paper, placed on the last line written on when the trainee stops to rest. Then when he goes back to his writing he can easily tell where to start writing without having to check with someone else.

Keeping track of writing

□ Examination of the writing board is not sufficient to afford the trainee complete awareness of how much space is available to him and so a number of exercises are used to orient his spatial conception of the writing board. Although the space between ridges is the same as the space between two lines on a piece of wide-line paper, it usually feels as if there is much less space when a person first tries to write in it. The following exercises help the hand holding the pencil to learn how much space there is between the ridges.

Preliminary Exercises

The first exercise is to write a line of "mountain peaks" (see Diagram 1). The trainee is to try to space the peaks evenly and to make each stroke approximately the same length. Usually one or two lines of "mountain peaks" are written before a client goes on to the next exercise.

The next exercise is to write a line of loops (see Diagram 2) with each loop being the full height of the space. Again, the letters are to be connected and to be spaced evenly. If, toward the end of the line, the letters become sloppy in appearance and tend to overlap more, this is usually an indication that the trainee's hand is getting tired. When this occurs and also after writing every two or three lines in the early lessons (less often in later lessons), the trainee should stop writing and hang his arms down to the side for a minute or so. This helps to relax the hands and rushes a fresh blood supply to the nerve endings in the fingertips, thereby increasing the sensitivity.

The next exercise is writing a line of script "t's" going up and coming back down on the same line. It is recommended that the "t's" not be crossed at this time but that the letters all be connected and spaced evenly (see Diagram 3). Moving from one exercise to the next is dependent upon the trainee's skill in writing an evenly spaced line of loops and uncrossed "t's" before changing to the next letter.

After writing the line of "t's" the trainee begins working with half space letters by writing the letter "l" (a tall loop) followed by the letter "e" (a short loop). The guide finger can be used as an aid in determining how tall the "e" should be (see Diagram 4). If the forefinger is lying flat in the groove or valley, the center of the fingertip is midway up the space.

The first few exercises using the handwriting board stress the use of the full space—going from the base line up to the top ridge with all appropriate letters. It is not intended that a person's style of writing be changed. After the trainee has become fully familiar with the space available, therefore, writing to the top ridge is no longer emphasized, although following the base line is stressed. In evaluating a trainee's writing it is important to check back with his original samples to be sure that there is no attempt to change his style of writing.

In dotting an "i" or "j" or crossing a "t," it is usually recommended that the trainee complete the letter by coming back to the base line, then bring the guide finger forward so that it is touching the pencil. Leaving the guide finger in place, the trainee lifts the pencil, dots or crosses the letter, and then returns to the place the guide finger is marking. Although the lines may not exactly match up, there is usually not much of a gap and it is apparent that the break is not intended to be the end of a word. This has been found to be a simpler and more accurate means of dotting and crossing letters than finishing the word and trying to remember where the letters are located, especially in words such as "definition," which include several such letters.

In working with letters that go below the base line ("f," "g," "j," "p," "q," "y" and "z"), the trainee first looks with his finger, and then with his pencil, at the lower ridge. There is a flat area at the top of the ridge. In writ-



Diagram 1.
"Mountain peaks."



Diagram 2.
Loops.



Diagram 3.
Uncrossed "t's."



Diagram 4.
Tall and short loops.

Dotting and crossing letters

Descenders

ing the descender of a letter such as "g" or "y," the trainee takes the pencil up on to the ridge, makes the loop of the descender in the flat area without going down into the next space, then returns to the baseline. It is usually helpful to try writing these letters singly a number of times and then to write some short words containing them for practice both in dotting and crossing letters and in making descenders.

□ After a trainee has become familiar with the writing board and has mastered the preceding exercises, he is encouraged to try writing his name and address. When his name is consistently legible, he can go on to other words, phrases, sentences, paragraphs, and finally to practice writing letters and addressing envelopes.

In practicing the addressing of envelopes using the grooved writing board, a business-size envelope is usually used. The trainee starts by writing the address of the person to whom the letter is being sent and then the return address. The right hand edge of the envelope is first lined up with the right hand edge of the board, the flap of the envelope is hooked over the top of the board (to help align it and to prevent there being three layers of paper through which the ridges must be felt). The envelope is then secured with two paper clips, usually along the top of the envelope.

The middle of the envelope can be located approximately by placing the little fingers in the upper corners, and spreading the other figures of the hand equally. The forefingers will meet near the middle of the envelope. The middle of many envelopes can also be determined by locating the point of the flap. The center line can be marked with a paper clip at the top of the envelope. If the address to be written is of average length, then writing would begin even with this clip; if especially long, it would begin to the left of the paper clip. To find the first line, the trainee counts up from the bottom of the envelope three lines or ridges, checks for the middle of the envelope, and writes the name. He then goes down to the next line, locates the middle, writes the street address, and so on. Most people will not have much difficulty with this method.

To write the return address, the envelope is moved so that the left edge of the envelope is even with the left edge of the board. This time it is secured with a clip at the top on the right and with a clip on the left side near the bottom of the envelope. The return address is written in the upper left hand corner, starting with the top line and using as many lines as are necessary. It is very rare for the last line of the return address to overlap the first line of the addressee. Notations for "Airmail" or "Special Handling" can be written to the right of the return address as it is being written, usually on the same line as the second or third line of the return address.

The Templet-Envelope Addresser (available from the Steven Brothers Foundation, Inc.) is a piece of cardboard, having three openings or windows. Placed over the lower right-hand corner of the envelope, the top window is used for the name, the middle for the street address, and the bottom for city, state, and zip code. If any of the letters in a word contain descenders, the word will have to be written up in the space rather than along the base line.

Name and Address

Envelopes

Return address

Addressing guide

When this guide is used for the address of the person being written to, the return address is written on the back of the envelope to prevent overlapping of parts of the addresses. As using the templet would mean using most of the back of the envelope to write the return address, the individual usually uses his guide finger to estimate where to write the different parts of the return address.

☐ Although some trainees may feel that they won't use their handwriting very much for writing letters, their signatures are very important to most of them. There are a number of signature guides that can be used. One that is placed over the paper is the Templet-Signature Card from the Steven Brothers Foundation, Inc. This is a piece of cardboard with a single window. If a person needs help in writing smaller, a templet with a smaller window may be cut for him from a piece of cardboard. Some prefer the signature guide from the American Printing House for the Blind. This is a piece of rubber-backed aluminum with a window cut in it and a piece of elastic cord stretched horizontally across the window. The American Foundation for the Blind (15 West 16th Street, New York, N.Y. 10011) also has a signature guide, one consisting of two thin metal rods supported by two rubber blocks. The blocks hold the rods up off the paper and keep the guide from sliding around. All of the above aids are used by placing them over the spot requiring the signature and although they need to be placed by a person having some vision, the person doing the signing can hold the guide himself. A signature guide can also be made by cutting off a piece of the grooved writing board. This can be placed under the paper and the person uses the grooves to guide him just as in signing a letter when using the whole board. Some people find that they prefer not to use a signature guide at all. Their spatial concept of what and where they are going to write is sufficient for them to write in an adequately straight line, if they know where the line begins.

There is an easy way to sign a typewritten letter without having someone else indicate where to write. The trainee first types the closing ("Sincerely yours,") skips three line spaces, sets the ribbon on stencil so that the keys will not strike the ribbon, and types a line of 20 or 25 periods. On a business letter, he goes down another line or two and, after returning the ribbon to its usual setting, types his name. After the paper has been taken out of the typewriter, the line of periods can be felt (sometimes only from the underside of the paper, sometimes from the top) and can serve as a guide for placing the signature. The dots flatten out quickly if pressure is placed on them. This method does require a good sense of touch because the dots are less pronounced than braille dots.

An important use of the signature is signing checks. A check stencil (available from the American Foundation for the Blind) can be made from a blank sample check supplied by the individual. The stencil has openings for all parts of the check that are to be filled in, date, payee, amount, and signature. Raised-line checks can be obtained from the Omaha National Bank (Omaha, Nebraska) or from the American Printing House for the Blind. The lines are heavy enough to be felt by the person filling in the check.

☐ There are very few circumstances that would prevent a person who is blind

Signature Guides

Signing typewritten letters

Check stencil

Habilitation of a New Skill

from learning to write his name. Some individuals may already know how to write a few letters in their name, others may not know any part of their name. A few may be able to write their names, but only in a very crude, often illegible manner. For individuals who have never learned to write their signature adequately, *Longhand Writing for the Blind* by Elizabeth Freund can provide an overview of what is involved in handwriting: how to hold a pencil, good posture, etc. This book also contains descriptions of how the letters are formed. It is available in braille with an inkprint copy for the instructor, and contains embossed and engraved letters.

In learning to write new letters, engraved letters can be used to train the kinesthetic memory* in the pattern to be followed. An eight-inch wooden stylus, which is similar to a pencil and can be made from doweling sharpened in a pencil sharpener and smoothed down with sandpaper to a rounded point, is used to trace the letters.

Kinesthetic memory

In working with the trainee, several tools are used in starting to write. Some clients start by using a screenboard and a wax pencil. The screenboard is a piece of insulation board with a covering of window screening stapled on and the edges covered with masking tape. Lightweight paper is marked with a tracing wheel to make raised lines, usually $\frac{3}{4}$ inch to one inch apart, and then clipped to the screenboard with Acco clamps (#225). When writing on this with the wax pencil, the screen causes the pencil to make a raised line. The student can "see" what he has written and is then able to correct his own errors. Some trainees do not need to visualize their work this concretely and can work directly from the engraved letter to the grooved fiber writing card.

Tangible aids

If a trainee has difficulty in grasping the forms or shape of a letter, some additional aids are available. One of these is the raised line drawing kit (American Foundation for the Blind), which is a rubber-covered clipboard used with clear, 8½- by 11-inch sheets of plastic. Writing on the plastic sheets with a ballpoint pen creates raised lines. Peculiarities of a person's handwriting can be demonstrated to him in this manner. Those who have difficulty in grasping the concept of a round line or a sweeping line and who have partial vision can be helped by working at a blackboard. Here he is able to write large, sweeping letters repeatedly and thereby get the "feel" of the letter.

Raised line drawing kit

In the habilitation of handwriting, the signature is usually taught first. Our experience has indicated no advantage in teaching the letters in groups. Usually only the letters contained in the person's name are taught in the beginning. Occasionally two letters will be taught separately and then put together to make a third letter, such as "a" followed by "l" and later combined to make a "d." In teaching handwriting as a new skill, the last name is taught first. The letters are learned one at a time, usually the lower case (small) letters first and then the capital letters, and then put together. It is important that the trainee work a minimum of three hours a week, preferably one hour a day, five days a week, in a formal class to learn this skill. Frequent repetition is necessary to develop the proper kinesthetic memory in the hands.

* Kinesthetic memory is that muscle sense that allows a person to complete a task, such as automatically tying a bow behind his back, without needing to see what he is doing.

In working with either the screenboard or the writing board, the trainee first uses an engraved letter, tracing it with the stylus 15 to 20 times. He is then asked to trace the letter with his forefinger on the table. When he is able to trace it accurately on the table, he starts using the pencil to write the letter on the paper. The trainee works consistently from engraved letter to paper and back again until he is able to write several lines of the letter in a consistently legible manner. He will work in the form five to ten times, write a line, go back to the form for five to ten times, return to the paper, and so on. After the client has mastered one letter, he goes on to the next. As he adds new letters, he should periodically go back to review the letters already learned.

□ After all of the letters in his name are learned, the trainee is ready to start putting them together. If he has been working with the screenboard, he will first practice writing the letters on the board before he tries to put them together. First, he practices writing the letters in order several times without connecting them. The trainee's name, written in longhand, is engraved in letters two inches tall, in a piece of masonite. With this aid he is then able to "see" how his name goes together, using his stylus to follow the letters. He is allowed to take this home with him when he leaves the center, if he feels it will be of further value to him.

After the client has put all of the letters of his name together, he should work on writing it smaller. An aid to this is to divide the board into two and later three columns by tying elastic cord vertically around the board. After he is able to write his name consistently in a space one third of the width of the board, he can start working with the various signature guides. The first guide should be long enough to endorse a check, but short enough to encourage writing letters that are small in size. Then he may try some of the other signature guides mentioned above.

After they have perfected their signature, some trainees are interested in learning to write more of the letters of the alphabet. Their interest in this, their ability to learn new skills, and the length of time they are to remain in the center program must be considered before proceeding. If they go on with their writing, new letters are learned in the same manner as the letters in their name. As they learn more letters, they can begin putting them into short words, then sentences, and later short paragraphs. If there is time, they can practice writing letters and addressing envelopes.

For the partially sighted person, it is important that he have a way of writing that others can read. The methods of restoration of handwriting skill will satisfy this need, but it is also important that he be helped to use his remaining vision as much as possible. A felt-tipped pen, such as a Flair or Felt-riter, will make a much darker and bolder line than a ballpoint pen. These pens come with tips of varying widths and with inks of varying shades, although black ink is preferred by most people. This is an excellent aid for helping the partially sighted person to re-read his own writing.

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Use of engraved letters

Putting the Name Together

Reducing the size of the signature

Learning more letters

Marking pens for partially sighted writers

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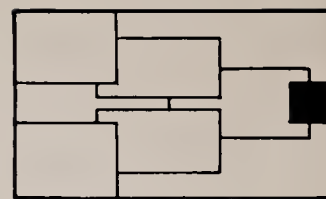
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Ed. note: Because the above article may be of practical use as a teaching tool in schools and agencies for blind persons, reprints will be available after January 1. Up to five copies of the reprint will be free. Prices for larger numbers are as follows: 10 copies—\$2.00; 25 copies—\$3.75; 50 copies—\$6.50; 100 copies—\$12.00. Shipment will be facilitated if payment is received with the order.

Orientation and Mobility Training in Israel—Continued from page 316.

Because of the continued rapid development of Israel and the highly changeable situation in that part of the world, the Institute of Orientation and Mobility faces many difficulties. "Their problems," observes Mr. Siegel, "seem to center around the fact that many of the new immigrants to Israel, as well as some groups native to the area, come from cultures that do not provide any education for their blind population. Certainly, working with a blind adult who has never thought about doing anything by himself is quite a challenge. The responsibility for changing many such deeply instilled attitudes, therefore, falls to the rehabilitation worker. Despite their many problems, the Institute has accepted the responsibility and is maintaining a progressive program that seems to be having a very beneficial effect on the rehabilitation of blind persons in Israel."

Cultural differences present problems



Missing your December or January issue of the *New Outlook*?

Well, if you think you have troubles, just listen to one of our foreign subscribers who wrote to us last spring (1970):

"I started subscribing to the *New Outlook for the Blind* in June 1966. The December issue of that year did not arrive. It could have been an accident.

"In 1967, again the December issue did not arrive. That could have been a coincidence.

"In 1968, the January issue was missing. Now it is 1970 and Lo and Behold! the January issue did not arrive, but the February issue is in my hands."

And then she asked for the missing issues, which we happily sent, except for one that was by then out of print.

If you have similar problems (in December, January, or any other month, except July and August when we don't publish), let us know. The normal mailing time is during the third week of the month preceding the publication date, but sometimes we and the printer are a bit slow and often the mails are. So if you don't have your issue by the middle of the following month (February for the January issue), write.

This year, we are hand-addressing and air mailing copies of the December and January issues to our harassed subscriber. And then, no doubt, the February issue will fail to arrive.

—P.S.S.

One of the great mysteries, to me, in the history of book publishing is the fact that

for so long it never occurred to anyone to print books in large, clear type. Admittedly, in the first and second centuries after the invention of printing, there would probably not have been much of a market for such books because there were not that many people who could read and ordinary books were already relatively expensive. Nevertheless, it was long believed (however falsely) that reading small print contributed to the failing of eyesight. And yet the print stayed small.

Children's reading primers, once they were introduced, were usually printed in rather large type, but the tendency in books for adults, particularly in the late 19th century, was for the type used to get smaller and smaller. Although this may have been done to save paper in those days of the four- and five-volume novel, the strain of reading such small print (in many cases it was smaller than modern-day newspaper print) would hardly seem to be worth the lower price.

In the 20th century, publishing made some progress in this area, but the idea of commercially-produced books intended especially for adults with less than normal vision was a long time in coming. That their introduction by Keith Jennison in 1965 was overdue is clear from the great popularity that the books immediately enjoyed. The success of the Jennison publishing venture is also indicated by the fact that within a short time more than two dozen publishers had followed in his footsteps.

In 1970, with the "large type revolution" nearly five years old, large type

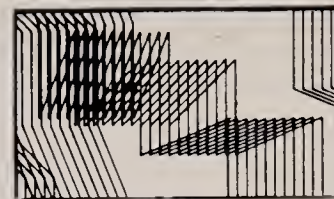
books have finally achieved something of an "official" status with the publication of *Large Type Books in Print* by the R. R. Bowker Co. The existence of more than 1,200 titles in large type obviously required some sort of authoritative guide to the specific titles that were available. Bowker, a Xerox company and the leading publisher of library and book publishing reference tools, decided to fill the need.

Large Type Books in Print (xxi + 193 p., available at \$10 net postpaid from R. R. Bowker Company, 1180 Avenue of the Americas, New York, New York 10036) was produced under the editorship of Robert A. Landau and Judith S. Nyren. It lists by title all of the general reading and reference works plus textbooks (arranged by subject) that are currently in print. A valuable directory of publishers and indexes of Bibles and Bible commentaries, reference works, and the authors are included. The entire book is itself in large type and includes a foreword by Howard Haycraft, chairman of the board of H. W. Wilson Company and past chairman of the American Library Association's Round Table on Library Services to the Blind.

Although there were some large type books being produced by volunteers using special typewriters and in limited runs by non-profit publishers for the partially sighted prior to 1965, there can be no doubt that it is only through the involvement of commercial publishers that large type books have begun to reach the very wide reading public whose needs had for so long been neglected.

—M.E.Mo.

Answers to Accreditation Questions



National Accreditation Council for Agencies

Serving the Blind and Visually Handicapped

Q. Our agency has been financially handicapped but we try to do as good a job as possible with what we have. Will the Accreditation Commission take this into consideration?

A. Accreditation takes into consideration where you are going as well as where you are. But you should not be standing still! Ask yourself: Are we moving in the right direction? Are the chances good that within the next year or so we shall be able to correct major weaknesses that we have come to recognize because of our self-study?

Several agencies have found that they could get funds for long-needed improvements when the needs were attested by an outside, independent review such as the on-site team visit that is part of the accreditation process. Sometimes, also, new ways to solve old problems may suggest themselves when staff are stimulated by the self-study and by talking with their peers on the review team.

There are many ways in which you may overcome handicaps and qualify for accreditation. For example, you might seek consultation from the American Foundation for the Blind or from the Division of Services to the Blind, Rehabilitation Services Administration, U. S. Department of Health, Education, and Welfare.

Q. As a school administrator, I wonder—are efforts being made to develop reciprocity between NAC and each of the various regional accrediting bodies for schools? Our regional body has no instrument for evaluating special education such as we offer.

A. NAC enjoys good relationships with the regional accrediting bodies for schools

and hopes to develop specific cooperative agreements with them. Since each of the regional associations has its own way of doing things, individual understandings must be worked out and this will require considerable time and effort on NAC's part. We know that better relationships with the regional accrediting bodies would serve the interests of residential schools for the blind and also will provide a base for increased cooperation between general educators and educators of the blind.

Q. I have heard that there are new standards for the production of reading materials—braille, recorded, and large print. Our agency is multi-purpose, including a program in which volunteers produce braille and large print books for students. We are about to order the general Self-Study and Evaluation Guide in order to start our self-study. Will the new standards be automatically included in the Guide or do we have to order the additional standards separately?

A. The new "Standards for Production of Reading Materials for the Blind and Visually Handicapped" will be in Section D-7 of the *Self-Study and Evaluation Guide* that you order. This section will be included automatically in every complete volume of the *Guide*, at no increase in cost.

As you know, however, you will need separate sections of the *Guide* for use as working copies by your various study sub-committees. For instance, a sub-committee reviewing your administrative procedures would need to have its own copies of Section C-1, Agency Function and Structure and probably C-2, Financial Accounting and Service Reporting—depending on what areas have been

assigned to your various sub-committees. Thus the sub-committee reviewing your program of producing braille and large print textbooks would not need the complete *Guide*, but it would need its own copy or copies of Section D-7. Like the other sections, D-7 can be purchased separately printed on three-hole punched paper so it may be kept in a ring binder. Separate sections vary in price, depending on their size. D-7 will cost \$1.00.

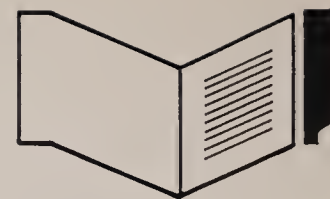
Q. How can we tell whether our agency is ready to undertake its self-study to begin to qualify for accreditation?

A. The essential ingredients of a successful self-study are (1) a willingness to invest the time, effort, and expense entailed in carrying it through; (2) the understanding and support of the study's purposes by your staff, your constituency, and members of your board or other volunteers concerned with your operating policies; (3) the active participation by many of these persons in the actual procedures; and (4) your conscious commitment to carry out, to the greatest possible extent, any improvements which the self-study shows to be needed for strengthening your agency's structure and services.

If you have these ingredients, you are ready to form a self-study committee and get started. The "Manual of Procedures" in the *Self-Study and Evaluation Guide* tells you how.

What is your question about accreditation? Send it to the National Accreditation Council, Suite 1406, 79 Madison Avenue, New York, N.Y. 10016. If it is of general interest, we'll try to answer it in this column, but, in any case, you will receive a direct, prompt reply.

Current Literature



Rehabilitation Counseling of the Blind, by Thomas A. Routh. Charles C Thomas, Publisher (301-327 East Lawrence Avenue, Springfield, Illinois 62703), 1970, 85p. \$6.75. The author is a planning, evaluation, and training specialist in the Division of Welfare, Tampa, Florida. Chapters are devoted to such subjects as "Group Psychotherapy for the Blind," "Group Work for the Blind," "Interviewing the Blind," "Evaluation of Client Potential," as well as many other aspects of rehabilitation counseling.

The Visually Limited Child, by Ruth E. Bonner and Mary E. Lovett. MSS Educational Publishing Company, Inc. (19 East 48th Street, New York, N. Y. 10017), 1970, 74p. \$2.50. Much of this book is devoted to the historical background of blindness, structure of the eye, and descriptions of various visual defects. Chapter 3 (p.53-69) is entitled "Organization and Administration of Special Education Facilities for the Visually Limited."

Physical Education of Pupils With Defective Vision, and Problems of Orientation, by W. J. J. Kooyman. *The Teacher of the Blind* (The College of Teachers of the Blind, Royal School for the Blind, Church Road North, Wavertree, Liverpool, L15 6TQ, England), Vol. 58, No. 4, July 1970, pp. 99-105. Text of a speech delivered June 6, 1970, in London, by Mr. Kooyman of the Royal Institute for the Blind in Bussum, Holland.

New Development in Educational Cartography, by William A. Dando, Paul A. Groves, Paul D. McDermott, and Joseph W. Wiedel. *The Journal of Geography* (National Council for Geographic Education, Room 1532, 111 West Washington Street, Chicago, Illinois 60602), Vol. 69, April 1970, pp. 204-12. Section entitled "A Special Problem in Education; Maps for the Blind" (pp. 209-11) was written by Groves and Wiedel and reports on part of a special government-supported research project.

Caring for the Visually Impaired Older Person: A Practical Guide for Long Term Care Facilities and Related Agencies, by Roger M. Jolicoeur. Minneapolis Society for the Blind, Inc. (Community Rehabilitation Services Department, 1936 Lyndale Avenue South, Minneapolis, Minnesota 55403), 1970, 46p. \$5.00. An illustrated handbook offering a step-by-step practical approach in evaluating and providing basic services for the older person with a visual handicap.

Changing Focus: The Development of Blind Welfare in Britain, by June Rose. Hutchinson & Co. Ltd. (178-202 Great Portland Street, London W1, England), 1970, 136p. The "changing focus" of the title is from patronage and pity to recognition of the rights of blind people to live as ordinary citizens. The book details the gradual emancipation of the blind and the struggle to restore to them the freedom and dignity that sighted people take for granted.

—M. M. R.

News in Brief



■ The National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, New York City, has announced the accreditation of four agencies and schools. They are the Michigan School for the Blind, Lansing; the New York Association for the Blind, New York City; Oklahoma School for the Blind, Muskogee; and the Pittsburgh Branch, Pennsylvania Association for the Blind, Inc.

■ In an effort to promote better eye care, an editorial in the September 21 issue of the *Journal of the American Medical Association* urges that all spectacles and sunglasses be made with shatter-proof lenses. The editorial suggests that all Americans follow the lead of the three military services, which are now initiating a change to shatter-proof lenses for all service personnel.

■ Dr. Edward J. Waterhouse, director of the Perkins School for the Blind, Watertown, Massachusetts, since 1951, will retire from that post at the end of August, 1971. Benjamin F. Smith, the present assistant director of the school, has been selected to succeed Dr. Waterhouse. Mr. Smith, who has been with Perkins since 1937 as a teacher, dean of boys, dean of the school, and principal, will be only

the sixth person to hold the position since the founding of the institution in 1831 and the first to have a visual handicap.

■ After detailed safety studies, the Laser Laboratory of the University of Cincinnati Medical Center has reported that the laser cane "has an extremely low rate of radiation emission well within safe limits for human usage." The cane, which has three small lasers mounted in it to detect obstacles via the reflection of the laser beams, was developed by Bionic Instruments, Inc., Bala Cynwyd, Pennsylvania, under sponsorship by the Veterans Administration's Prosthetic and Sensory Aids Service. The Medical College of Virginia also cooperated in the testing. The laser cane is still only experimental and, at present, there are only ten in existence.

■ Dr. Dan M. Gordon, a leading eye specialist, professor of ophthalmology, and author of several medical textbooks, died on September 17 in New York City. He was 63 years old. Dr. Gordon had been a member of the National Institute of Health Planning Board and had served as a consultant to the Surgeon General of the U.S. Public Health Service, the Veterans Administration, and the American Foundation for the Blind.

■ Four appointments to leadership positions in the Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare, were announced recently. Richard M. Longmire, formerly head of the public communications and safety department of the Research Analysis Corp., McLean, Virginia, has been appointed associate administrator for planning, research, and training. Wilbur L. Parker, formerly with the California Department of Social Welfare, has been appointed assistant administrator for program statistics and data systems.

The regional commissioner of Region II of SRS (in New York City), James C. Callison, has been named assistant administrator for program planning and evaluation. Samuel E. Martz, assistant administrator for planning and evaluation since 1967, is assuming the new position of assistant administrator for the Office of Priority Programs.

■ Francis B. Ierardi, founder of the first braille newspaper in the Western Hemisphere, died September 14 at his home in Somerville, Massachusetts. He was 84 years old. Mr. Ierardi, who retired four years ago as editor of *Weekly News*, had founded the organization in 1927 with the help of his wife, the former Laura Sterling, who died last year. *Weekly News* is now the National Braille Press, Boston. Blinded when he was 12 years old, Mr. Ierardi was educated at Perkins Institute for the Blind and worked as a social worker with the Massachusetts Division of the Blind for most of his life.

■ According to a report in the *Travel Agent*, the travel industry magazine, SAS, the Scandinavian airline, is recommending that blind people be given fare concessions for their sighted guides. The recommendation, resulting from suggestions made by the associations of the blind of Denmark, Finland, Norway, and Sweden, includes three alternative proposals: a 50 percent rebate for both the blind person and his sighted guide, a 50 percent rebate for the blind person only, or a 50 percent rebate for the guide only. No action has as yet been taken on the recommendation.

■ *Toomey's Gazette*, the annual international journal and information service for the disabled, has been renamed *Rehabilitation Gazette*. Edited by Mrs. Joseph S. Laurie (Box 149, Chagrin Falls, Ohio 44022), the *Gazette* began in 1958 as a newsletter for ex-patients of the contagious ward, Toomey Pavilion, Cleveland Metropolitan Hospital. Dr. J. Toomey was a renowned specialist in infectious diseases. The magazine now goes to 10,000 readers in 61 countries.

Correction

In the article "CAMA Board Operator: A New Employment Opportunity," by Thomas H. Stout (*New Outlook*, October 1970), the following error should be noted: the second sentence of the third paragraph (page 258) should read, "Depending on the number of calls handled, there will be from two to 10 CAMA positions," not 40.

■ Kent Tyler Wardell, formerly an orientation and mobility specialist on the staff of the Cleveland Society for the Blind, is now on the graduate faculty of the Orientation and Mobility Program, California State College at Los Angeles.

Coming Events

December 1-5 Special Education Media Conference, Council for Exceptional Children, San Antonio.

December 13-18 White House Conference on Children, Washington, D.C. 1971

January 18-23 American Library Association, Midwinter Meeting, Los Angeles.

February White House Conference on Youth, Washington, D.C.

March 17-20 Association for Children With Learning Disabilities, Annual Conference, Chicago.

April 4-8 American Personnel and Guidance Association, Atlantic City.

April 18-24 Council for Exceptional Children, 49th Annual International Convention, Miami Beach.

April 29-May 1 United Cerebral Palsy Association, Annual Conference, Denver.

April 30 National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Annual Meeting, Atlanta.

May 9-12 International Association of Rehabilitation Facilities, Las Vegas.

May 16-21 National Conference on Social Welfare, Annual Meeting, Dallas.

May 17-20 National Braille Association, 11th National Conference, Chicago.

June 6-10 Special Libraries Association, San Francisco.

June 20-26 American Library Association, Annual Convention, Dallas.

August 4-8 Blinded Veterans Association, 26th National Convention, Miami Beach.

Sensi-Quik

The Touch Cane for Walking
Faster with Safety



The New Fiber-Glass Cane

Sensi-Quik's shaft is made of large diameter, tapered tubular fiber-glass with gleaming white pebble finish, and has a bright red band at its tip. The smart-looking contour handle is of black vinyl. The 1/2-inch diameter, diamond-hard, tungsten-carbide working tip resists wear, and produces sharp, useful touch information. The cane is put together with epoxy, as fiber-glass golf clubs are, to withstand repeated sudden impacts.

The Sensi-Quik fiber-glass model comes with either crook or contour handle and either carbide or replacement steel tip. Sensi-Quik is also available in high-strength, nickel-plated, steel shafts recommended for 50- to 60-inch canes when extra strength is desired. The steel shaft adds three to four ounces to the weight of the cane.

Canes are made on individual order in any length from 34 to 60 inches.

Developed and distributed by the Go-Sees, a non-profit corporation, Sensi-Quik canes are not sold. They are supplied to anyone who joins the Go-Sees and pays a membership fee of \$5. They are also available through agencies to individual trainees at a reduced rate of \$4 (they must be ordered in even-inch lengths).

Persons or agencies interested in the Sensi-Quik cane are invited to contact



Along with the Sensi-Quik cane, the Go-Sees provide an instructional manual entitled "Touch and an Occasional Tap." It is available on disk and tape and in braille and ink-print. In addition to stating the philosophy of the Go-Sees, the manual teaches the vocabulary of "cane talk words" that enable the traveler to respond quickly and deftly to the messages his cane picks up from the environment. The manual is available on loan from the address below.

Franklin S. Clark
The Go-Sees
166 East 92nd Street
New York, N.Y. 10028

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THE NEW OUTLOOK FOR THE BLIND

VOLUME LXIV, 1970

New York, 1970
American Foundation for the Blind, Inc.
15 West Sixteenth Street

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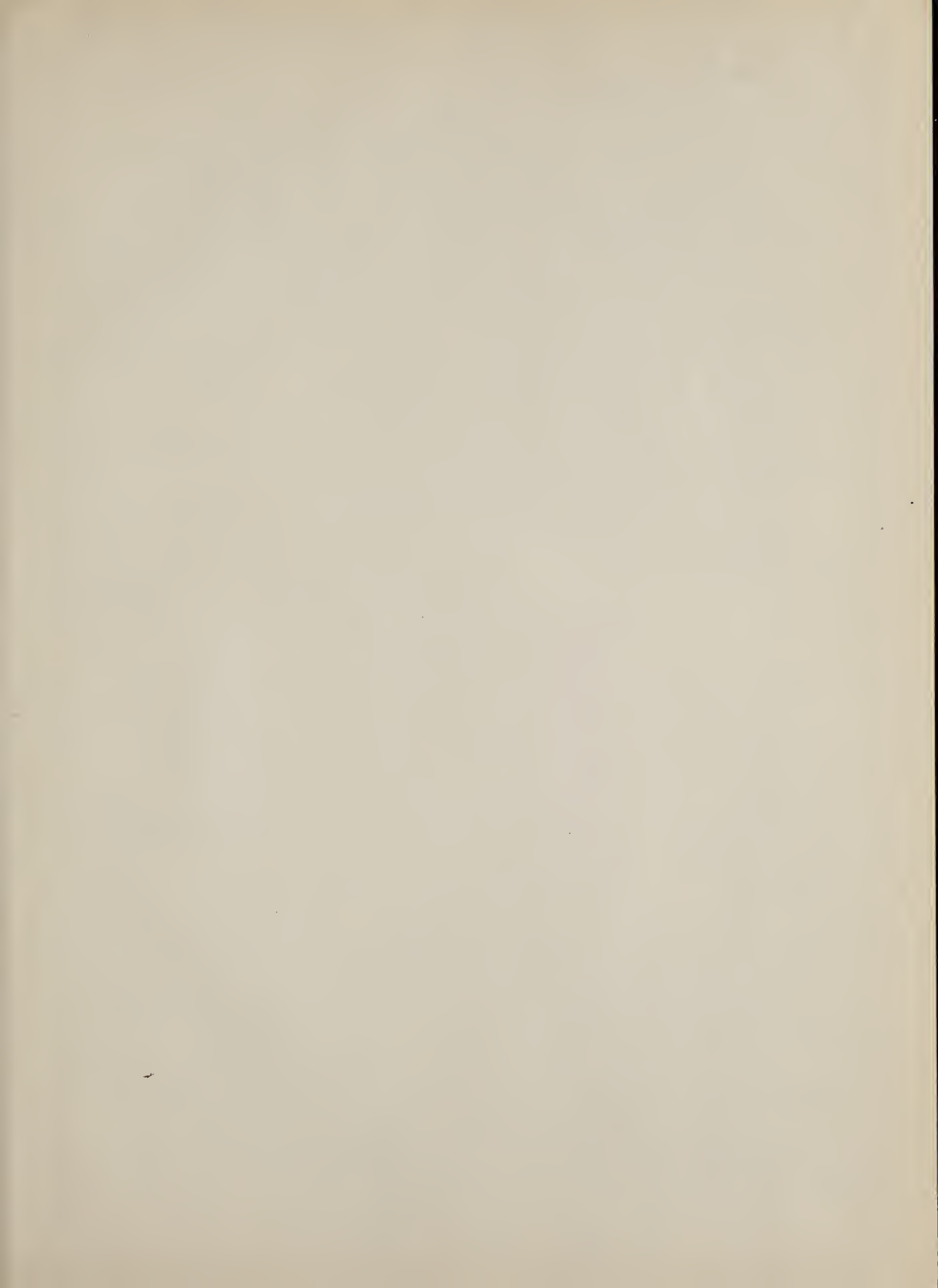
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